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Paper Production Increasing In Wisconsin

Census Figures of United States Department of Commerce Show Output Totalled 792,117 Short Tons Valued at $63,512,115 In 1935, Compared With 718,473 Short Tons Valued At $50,273,853 In 1933— Menasha Co. To Build.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 1, 1937 — Paper production in Wisconsin in 1935 reached a total of 792,117 short tons valued at $63,512,115, according to census figures of the United States Department of Commerce. The state ranked second in the value of products, and fifth in quantity of production.

These figures give Wisconsin a substantial increase over the year 1933, when 718,473 short tons were produced, valued at $50,273,853.

Pulpwood production in Wisconsin approximates 700,000 cords a year. One of the largest producing centers is at Webster, where James Corcoran, timber operator, has taken out as high as 56,000 cords a year. Besides operating a number of camps, he buys large quantities from farmers who do their own cutting in the winter.

The Dells Paper and Pulp Company has been cutting for the last year in six camps around Glidden, Wis., where it has a sufficient supply to keep the crews operating for fifteen years. Both truck and rail are used for hauling out of the woods, and considerable cutting and peeling is now done in the summer months as well as the winter. Peeling is found easier in the summer, and the wood is allowed to dry to reduce the weight.

Shipments to Ashland, Wis., from Canada by raft and steamer approximate 75,000 cords a year. Heavy rail shipments also are being received from Minnesota and Northern Michigan. Operators look forward to a heavy increase in pulpwood shipments this year, due to increased demand from more than 40 paper mills operating in Wisconsin.

Menasha Addition to be Started

Building operations will be started soon by the Marathon Paper Mills Company on an addition to its Menasha Products Company (carton) division at Menasha, Wis. Application has been made to the City of Menasha for a building permit. Six lots adjacent to its present plant were purchased recently. Additional manufacturing space is needed to take care of increased demand for carton business and multi-color waxed wrappings.

News of the Industry

Net income of the Green Bay and Mississippi Canal Company for the year 1936 was $106,500. The company owns numerous water power sites on the Fox River which are leased to paper mills. Total assets are listed at $2,916,830.34, and the profit and loss surplus is $456,349.06. The current assets are reported at $101,291.25, and accounts payable are $2,857.10.

An exhibit of early American newspapers and magazines from 1854 to the present time is on display in the Kimberly Library of the Institute of Paper Chemistry, Appleton, Wis. They are the property of Linton E. Simerl of Chillicothe, Ohio, a student, who has spent twelve years collecting them. Rag content papers were used until about 1876, when use of wood pulp began. Its use became so rapid that today it is used exclusively. The publications show the difference in the aging qualities of rag and wood pulp papers, the former retaining their whiteness while the wood pulp papers look much older. Accounts of important historical events are recorded in the publications.

Badger Paper Mills, Inc., Peshtigo, Wis., will defend itself against charges of polluting the Peshtigo River with mill waste, at a hearing to be conducted by the Wisconsin State Board of Health March 16. A complaint has been filed by 200 citizens alleging fish were being killed by the mill waste, and that there is an intolerable stench in the summertime. A preliminary investigation by Adolph Kannenberg, chairman of the state committee on water pollution, led to the calling of a hearing.

Operations at the Union Bag and Paper Company's mill at Kaukauna, Wis., were stopped for six hours last week due to an ice jam. Heavy chunks of anchor ice lodged against the water wheels, and the machinery had to be stopped. No damage resulted.

An inspection was made last week by officials of Outagamie county of the Outagamie Paper Company mill at Kaukauna, Wis., owned by the Patten Paper Company, Ltd. The property was examined by Raymond P. Dohr, district attorney, John E. Hantschel, county clerk, and John Niesen, mayor of Kaukauna. The county is considering sale of the mill at a sheriff's sale in order to collect more than $60,000 in delinquent property taxes. It is reported there are several buyers who seek a clear title. The mill has been idle two years.

Bright Outlook Foreseen for Price Bros. & Co.

Earnings for Fiscal Year Ending March 31, 1938, Estimated at Approximately $2,450,000 — Total Income for Nine Months Ended December 31 Last Was $1,156,674 — Number of Outstanding Industrialists Agree to Join

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 1, 1937 — Public offering here of $15,000,000 first mortgage bonds of Price Bros. & Co. coincide with the issue of an estimate of earnings for the fiscal year ending March 31, 1938, which offers a bright outlook for the company.

To show the improvement already experienced it is stated that the total income for the nine months ended December 31 last, at $1,156,674, was more than double that in the similar period of the previous year.

Based on present prices for newsprint, lumber, etc., and upon actual current production costs, it is estimated that the company's earnings available for interest charges, depreciation and depletion in the fiscal year ended March 31, 1938, will be not less than $2,450,000, a sum which would be some 3½ times the interest charge on the first mortgage bonds.

Estimate Said To Be Conservative

This estimate may be said to be conservative to the extent that the first three months of 1938, at least, should see a substantially higher newsprint contract price.

Incidentally, as it emerges from bankruptcy the company is particularly fortunate in that a number of outstanding industrialists have agreed to join the board.

The proceeds of the bond issue will, subject to consummation in due course of the proposed compromise or arrangement between the company and its shareholders and the annulment of the adjudication in bankruptcy, be applied in repayment of moneys borrowed to discharge the previously outstanding first mortgage bonds and towards the discharge of all claims and expenses the payment of which is necessary to release the company from bankruptcy.

The New Board of Directors

The new board of directors of the company is expected to include A. A. Aitken, P. P. Hutchison, K. C., J. D. Johnson, J. C. Newman, and P. F. Sise, of Montreal; Alfred Marois, A. C. Picard and A. C. M. Thomson, K. C., of Quebec, and Sir Keith Price of London, England.

Lake St. John Disbursements

Directors of Lake St. John Power and Paper Company, Ltd., have authorized an initial interest disbursement on the 5 per cent debentures of the company, created under the recent reorganization. The disbursement, which will amount to 2½ per cent, covering in full the period from July 1, 1936, to January 1, 1937, will be made on April 1.

Price of Newsprint

In newsprint circles here reports of an upward revision of the 1937 contract price for newsprint are discounted and, although it is expected that there will be non-contract sales at substantially higher prices, chief interest seems to be attached to the 1938 price.

In this connection it seems possible that the 1938 price will be announced as early as August or September, although the usual date is in November. Last year, however, the announcement came in August, and while it is expected some company will again make an early announcement, thus precipitating matters, many manufacturers would prefer a much later announcement, on the ground that the premature action taken last summer is responsible for the present low price.

Chicago Paper Business Brisk

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 1, 1937—The Chicago market was devoid of any particular features this week as interest centered on the New York meetings of the industry. While reports of last week indicated that further strengthening would result from the conclave of the trade, business continued to be satisfactory in all lines that have substantially increased their position since the first of the year.

The fine paper market showed marked activity with the better grades of sulphites reporting better gains than for any similar period in a long time. Book and cover papers held their firmness while the kraft market, continually seeking new and higher ground, was also reported as "satisfactory."

The board market was firm with demand expanding and prices strengthening as raw materials bought before the present commodity rise dwindled down to force replenishment at higher prices.

Groundwoods were firm and the newsprint market was also reported as experiencing a good showing of present and future commitments. Waste papers were active, particularly in the higher grades.

Work of the Import Committee

According to a report by the Import Committee of the American Paper Industry, imitation parchment imported at Louisville from Belgium and at New York from Germany is claimed to be dutiable at 2 cents per pound and 10 per cent, under the Belgian trade agreement reducing the rate of duty on vegetable parchment. The paper was classified for duty at 3 cents per pound and 15 per cent and the importers have protested to the Customs Court against this ruling.

Two importations of paper and three importations of envelopes at Cleveland were held to have been undervalued, and the importers are asking the Customs Court to remit the additional duty imposed in lieu of penalty for such under valuation, on the claim that the under valuation was without fraudulent intent.

Five importations of Japanese light weight paper classified for duty at 6 cents per pound and 20 per cent as tissue paper, claimed by importers to be dutiable at 3 cents per pound and 25 per cent as decorated writing paper.

Issues Illustrated Price List

Samuel C. Rogers & Co., manufacturers of automatic saw and knife grinders, of Buffalo, N. Y., have just issued a new four-page illustrated price list, covering their new line of automatic knife and saw grinding machines, effective February 1.

New Bleached Sulphite Plant for Nipigon, Ont.

R. O. Sweezey Heads Lake Sulphite Pulp Co., Ltd., Formed by Canadian, U. S. and British Capitalists to Construct New $6,000,000 Mill—Initial Output Will Be 200 Tons Daily—Building Will Start In Early June This Year.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 1, 1937 — Canadian, United States and British capitalists, headed by R. O. Sweezey, of Montreal, who is widely known in pulp and paper circles, will construct a high grade bleached sulphite plant in the village of Nipigon, in Northern Ontario which, it is estimated, will cost on the neighborhood of six million dollars. The new concern, which will be incorporated under the name of the Lake Sulphite Pulp Company, Ltd., will start building activities early in June of this year and in twelve months proposes to have the plant in operation. The output will be 200 tons daily and it is estimated that between the plant and its bush operations some fifteen hundred men will find employment. In 1939, it is planned to raise the capacity from 200 to 400 tons.

This announcement was made recently by the Hon. M. F. Hepburn, Premier of Ontario, who stated that the details had been confirmed by the provincial administration. Under its timber reallocation legislation of last year, the government will make five million cords of pulpwood available to the concern over a period of 21 years. Approximately 225,000 cords will be used annually.

Provincial Paper's Earnings Up

The annual statement of Provincial Paper, Ltd., Toronto, of which S. F. Duncan is president, is of a most satisfactory character. The net earnings for the past year were $710,103, as compared with $688,617 in 1935. The net profit available for dividends after provisions for depreciation was $398,380, as against $376,890 before. Preferred dividends absorbed $245,000, the same as a year ago, leaving a residue of $153,380. This was equal to $1.53 a share on the 100,000 shares of no par value, against $1.42 a share in the previous year when $131,890 was earned. No dividends were paid on the common, and aggregate surplus was increased to $1,000,147.

The strong financial position of the company has been further improved. Current assets were $2,786,946 — over eight times current liabilities of $321,274, leaving net working capital of $2,465,672, representing an improvement of $213,813 for the year. Cash of $390,068 alone exceeded total current liabilities. Bonds of Dominion and Provincial Government held had a market value of over $403,000 and advances to receiver and manager of Abitibi Power and Paper Company, due March 31, 1937, (secured by receiver's certificate) amounted to $300,000.

During 1936 fixed assets increased $67,580 and property and plant account now stands at $9,459,672. Reserve for depreciation was increased during the year by $325,000, $100,000 of which was provided from profit and loss amounted to $225,000 by a transfer from general reserves, and now stands at $2,900,000. General reserves are $771,588.

News of the Industry

The government of Saskatchewan was recently approached by U. S. pulp and paper interests seeking concessions in the northern part of the province where it is proposed to establish a pulp and paper mill. It is understood that the plan is to build a dam at Dore Lake, which is some 150 miles northwest of Prince Albert. The proposal would involve an expenditure of $2,000,000 at Grand Rapids on the Beaver River and on a railway to connect with the Canadian National at Big River. Mr. Dawley, of the Marathon Paper Mills Company, Rothschild, Wis., has been conducting negotiations, and has arranged for the shipment of spruce pulp logs, from Northern Saskatchewan to the mill of his company. The United States interests are also seeking a 199-year lease on a large timber area in Saskatchewan.

The annual meeting of the shareholders of Interlake Tissue Mills Company, Ltd., whose head office is in Toronto and plant at Merritton, Ont., was held recently. The usual quarterly dividend was declared and the following officers re-elected for the coming year — President, George Carruthers; vice-president, S. F. Duncan; secretary, W. J. Parks. The past year was reported to be a most satisfactory one and, according to a statement presented by the president, the outlook for 1937 is very bright. There are orders on hand sufficient to keep the plant operating at full capacity for many months.

During the next few days the province of Ontario will likely conclude an agreement on pulpwood limits with the Abitibi Power and Paper Company, Ltd., Toronto. The Hon. Peter Heenan, Minister of Lands and Forests, stated that the arrangement to be made will be conditional on the company getting out of receivership. Mr. Heenan added that the Abitibi Co., which is the largest pulp and paper concern in Ontario, was now being operated by a trustee for the bondholders. He believed that the bondholders and officials were making satisfactory progress in their efforts to rehabilitate the affairs of the company, which would soon be back on its feet.

The securities of the Great Lakes Paper Company, Ltd., Fort William, Ont., have been listed on the Toronto Stock Exchange. The list covers 90,000 Class A preference shares and voting trust certificates representing 79,991 common shares. Authorized capital is 100,000 Class A preference shares, 100,000 Class B preference shares, and 100,000 common shares, all without par value. The funded indebtedness comprises $6,000,000 of 5 per cent mortgage, 20 years sinking fund bonds which were issued as part consideration of the assets of the old company.

F. H. Barlow, master of the supreme court in Ontario, at Osgoode Hall, Toronto, reserved judgment on a motion made on behalf of the Abitibi Power and Paper Company, Ltd., to have the names of bondholders struck out in an action in which the Montreal Trust Company, trustee for the bondholders, seeks to enforce a bond mortgage for $48,267,000. The Abitibi company submitted that the bondholders committee was not properly named as defendants. The action was started in 1932. In this, sale or foreclosure was sought, and the continuance of G. T. Clarkson, Toronto, as receiver.

The annual meeting of the Canadian Paper Box Manufacturers Association, whose head office is in Toronto, will be held at the Seigniory Club, Lucerne, Que., on June 21 and 22.

Association Activities In Philadelphia

E. Minor Fenton, Guest Speaker at Monthly Luncheon of Paper and Cord Association, Delivers Inspiring and Interesting Address — President E. K. Lay Announces Annual Banquet Will Be Held At Meridian Club April 2.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 1, 1937.—E. Minor Fenton, president of the Fenton Label Company of Philadelphia, was the guest speaker at the monthly luncheon of the Philadelphia Paper and Cordage Association in the Hotel Adelphia on February 19. Mr. Fenton delivered a very inspiring and instructive address on "Uncle Henry." The speaker has made an extensive study of the life of Henry Ford, particularly in regard to the business methods of the Ford Motor Car Company. He explained to his audience how these Ford methods have been applied to his own business very successfully, and it is his belief that the work of the world will be done by those best qualified to do it.

He stressed the fact that many industries make a big mistake in fixing too high a selling price on their products, and contended very emphatically that keeping prices on a high level is simply the means of keeping a lot of weak sisters in business. Mr. Fenton stated that every time a manufacturer is able, through the use of good labor and good machinery to lower his production costs, he then reaches a new strata of buyers. He summed it all up by saying that the old law of the survival of the fittest is still operating, and pointed out that those manufacturers that follow the policies of Henry Ford, regardless of what product they are manufacturing, are going to be the ones that will survive in the present situation.

Annual Dinner Plans

E. K. Lay, president of the association, announced that the annual Shad Dinner will be held this year on Friday, April 2 at the Meridian Club, Chancellor and Camac streets, at 6:30 P. M. John J. Shinners, Jr., chairman of the Entertainment Committee is making plans to have this April Shad Dinner the biggest and best dinner ever staged by the association. There will be unique entertainment features, and all members are urged to red pencil their calendars for this event on April 2.

The association's Golf Committee, with E. L. Richards, Buffalo Envelope Company, chairman, and his co-workers, F. W. Hastings, American Writing Paper Company; A. B. Sherrill, Mill Representative; and T. H. B. Smythe, head of J. L. N. Smythe Company, are now making plans for monthly golf meetings to begin in May. These meetings will be held at various Country Clubs in the Philadelphia area. The play will be on a different course each month. Attractive prizes will be awarded at each tournament for low gross, low net and kickers handicap. Members of the association desiring to participate in these monthly tournaments are urged to forward their names, addresses and telephone numbers, together with their golf handicap, to E. L. Richards, 401 North Broad street, Philadelphia. Each tournament will be followed by dinner and those wishing to remain for dinner are requested to make their reservations known to Mr. Richards.

President Lay states that this plan of the golf committee for the coming summer is going to furnish every member of the association with an opportunity, which otherwise would not be possible, to get acquainted and enjoy the contacts with their fellow members.

The next monthly meeting of the association will be held in the Rose Room of the Adelphia Hotel on Friday, March 19, at 12:30 o'clock.

New Paper and Bag Association

A new paper and bag association, formed at the National Convention, recently held in New York, will be known as the Eastern States Paper and Bag Distributors Association, and will include all the paper and bag distributors along the eastern coast. Charles Resnick, of L. Resnick & Sons, was elected president and Arthur H. Lewis, secretary-treasurer; with the Board of Governors consisting of H. J. Dowd of the Dowd Company, Inc., Boston, chairman; and S. S. Rhodes, of Standard Paper Company, Waterbury, Conn.; Frank Dubin, of Dubin Paper Company, Philadelphia; George Strott, of Baltimore, Md., and J. N. Freedman, of S. Freedman & Sons, Washington, D. C. The purpose of this association is to make for a closer tie-in between manufacturer and jobber, particularly in grocery bags, and strenuous efforts will be made to eliminate, wherever possible, unethical business methods. Temporary offices of the association are located in Room 1106, Franklin Trust Building, Chestnut at Fifteenth street, Philadelphia. It is expected the members will embody 250 to 300 jobbers.

Waste Merchants Elect Officers

At a meeting of the Philadelphia Waste Merchants' Association, held in Adelphia Hotel, the following were elected officers to serve for this year: President, James M. O'Neill, of Patrick O'Neill & Co.; vice-president, William Lemly, of William Lemly Company; treasurer, William Simmons, of John Simmons' Sons, and secretary, Dominic A. DiSanti, of Alexander DiSanti & Son. Those elected to the Executive Committee are William J. McGarity, Jr., Penn Paper and Stock Company; Harry Bailey, of Hemingway Company; Edward Orr, Pioneer Paper and Stock Company; George A. DiIenno, of George A. DiIenno; Louis Bantivoglio, of N. Bantivoglio's Sons; John Beitchman, Beitchman Bros., and Arthur L. Feierman, of Arthur L. Feierman.

Plans were formulated for the 32nd Annual Banquet of the asscition to be held on Tuesday evening, March 9, at Hotel Adelphia Roof Garden. The banquet committee comprising George French, of Castle & Overton, chairman; Arthur L. Feierman, Louis Bantivoglio, A. Kenneth Brigg, of Gloucester Paper Company, and David Dickson, of Penn Paper and Stock Company, is exerting every effort to make the affair a tremendous success. They promise an evening well worth attending, which will include a sumptuous dinner, a wonderful show and gala entertainment. An atmosphere of cordial and typical Quaker City hospitality and good fellowship will prevail, adding to the unforgettable enjoyment so characteristic of the association's former banquets for all those who attend. Already so many requests for reservations are pouring in from out-of-town members of the trade that the committee feels confident the affair will be the largest ever held. In order to assist the committee to make the proper seating arrangements, members have been requested to make their reservations as quickly as possible so they may be assured the most advantageous places. Chairman George French, Drexel Building, 5th & Chestnut streets, urges that all those wishing to attend this banquet accompany their requests for reservations with check for $5.00 per person.

Are you making *Dirty* Paper at a Loss —

When you can make *Clean* Paper at a *Profit*?

BIRD MACHINE CO.
SOUTH WALPOLE
MASSACHUSETTS

The difference between operating old screens and making dirty paper and operating new screens and making clean paper is often the difference between loss and profit.

That is why mill after mill is replacing or supplementing old screening equipment with modern, big capacity Bird Screens.

Let us go over your screening operation with you and show you what you can do to make *cleaner* paper and *more* money.

BIRD SCREENS

YOU CAN MAKE MORE MONEY WITH NEW BIRD MACHINERY

Paper Business Outlook Favorable In Boston

Both Fine and Coarse Paper Markets Hold Up Better Than In Corresponding Period Last Year — Offerings of Kraft Paper Limited — Higher Quotations Anticipated Shortly — Side News Run For Wrapping Reported Scarce.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 1, 1937—The wholesale paper market here for the last two weeks has been in a generally favorable condition, although in some quarters there was slightly less activity. At a large house handling both fine and wrapping paper, it was stated that the volume had held up considerably better in February than the corresponding month a year ago. Bonds and ledgers showed an upward tendency. Book papers, bonds, ledgers and tags moved well.

There is "almost a shortage of kraft paper," with consumers buying so as to be sure they will have it. With the prospect of an advance in prices, buyers are, perhaps, making their purchases somewhat speculatively. The kraft situation, in fact, is reported as acute, with some of the mills alloting their customers amounts based on the last previous purchases.

A great deal more kraft pulp is being sold in Europe by producers over there. A temporary holdup of pulp from the West Coast took place during the seamen's strike. The only mills said to be unaffected by these factors are in the South, nearer a source of supply.

Almost a shortage of newsprint also exists, especially side news run for wrapping. Buyers are obliged to pay the full price for side news run, which is ordinarily less in price than newsprint. The paper bag market is very strong. In the last week or so, the market for box coverings has been more active. The box board market has been fair, with an especially good demand for material for shoe cartons. Prices are tending upward.

Paper Stock Active

The paper stock market has been generally active in domestic material, especially in old papers. Dealers could have sold more stock if it had been obtainable. During the week ended February 20, it was reported that a representative of English interests was in this country looking for mixed papers, but when he found that the price had increased from $9.00 a ton to $10.00 a ton, did not buy.

Besides the advance of mixed papers that week to .50 per hundredweight from .42½ @ .47½, old newspapers rose to .60 from .52½ @ 57½, and corrugated boxes to .65 from .60 @ .65, all f. o. b. Boston. These prices were sustained during the last week. Bagging was steady for the fortnight, with nearly all grades moving. It is reported that, generally speaking, dealers have only a limited supply on hand.

New domestic rags were likewise steady, with the fine paper mills buying new cuttings at firm prices. In old domestic rags, during the week ended Feb. 20, roofing stock advanced, the No. 1 grade rising to 1.90 @ 2.00 from 1.70 @ 1.80, No. 2 to 1.70 @ 1.80 from 1.60 @ 1.70, and No. 3 to 1.40 @ 1.50 from 1.30 @ 1.35, all f. o. b., Boston. The last week, mills did not buy No. 3 grade of roofing stock quite so freely as during the previous week. Prices held steady in the other grades, but the No. 3 grade, which declined to 1.30 @ 1.40, f. o.b. Boston. Foreign rags were comparatively inactive, because prices were very much higher than those of domestic rags, which, under the circumstances, mills prefer to buy.

The first meeting of the new board of directors of the New England Paper Merchants Association was held February 17, with President Frank H. Winter in the chair. Plans were discussed for making the association of greater use to members outside of the Boston metropolitan area. William H. Walpole, of Rutter & McNaught, Inc., and Floyd H. Blackman, of the D. F. Munroe Company, were chosen delegates to the National Convention. Representatives for the commodity committee at the Convention selected are Streeter L. Bush, of Carter, Rice & Co., Corp., on gummed tape, and Samuel L. Ginsburg, of Ginsburg Bros., Inc., Somerville, Mass., on paper bags.

A very constructive dinner meeting, to which all the wrapping paper merchants in the Greater Boston area were invited, was held at the Boston Chamber of Commerce Wednesday evening, February 17 with about fifty attending. Harry J. Dowd, chairman of the Paper Distributors Cost Finding Committee, presided. The meeting was held in view of the fact that "wrapping paper merchants are facing at the present time one of the most serious shortages that we have had since the World War, with an accompanying effect on costs and profits." The gathering was "in the form of a little paper convention for the benefit of the Greater Boston merchants."

The distinguished speakers were Lens Ransom, Union Bag and Paper Corporation; James Richard Carter, 2nd, Nashua Package Sealing Company; Everett E. Ketcham, Southern Kraft Corporation, and Frank C. Herrick, Columbian Rope Company.

The following firms were represented: Andrews Paper Company, Atlas Paper Company, Ralph Bass, Inc., Boston Paper Supply Company, Brenner Paper and Box Company, Carter, Rice & Co., Corp., John S. Cheever Company, Cubell Paper Company, H. J. Dowd Company, Fort Hill Paper Company, G. & S. Paper Company, Ginsburg Bros., Inc., Howard Paper Company, Hurlbert & Hatfield, Kendall Paper Company, Sheldon W. Lewis, Malone Bros. Company, Merchants Paper Inc., D. F. Munroe Company, Mutual Paper Company, Pratt Paper Company, Lawrence P. Purington, Robbins Paper Company, Stimpson & Co., Stone & Forsyth Company and Sugarman Bros.

The Assessment Committee of the New England Paper Merchants Association is to meet Tuesday, March 2, for discussion of the 1937 budget. The committee consists of W. E. Porter, Jr., Robert M. Stone, John C. Hurd and Frank H. Winter, president, *ex officio*.

At the annual meeting of Knight, Allen & Clark, Inc., held Saturday, February 27, Walter F. Temple was elected a vice-president and sales manager. The other officers of the company remain the same.

Knight, Allen & Clark have added a new salesman, William Roades, to their staff. Mr. Roades, who has had a number of years' experience in the paper business, will cover Boston.

The officers and sales force of Knight, Allen & Clark were guests at the Manger Hotel Thursday evening, February 18, of the Eastern Manufacturing Company, of Bangor and Lincoln, Me., with general offices in New York City. E. L. Simpson, of the latter company, gave a talk

Look for the red Moth-Seal* bag . . . no moth can penetrate the tough, treated paper. Completely sealed at bottom; double-lock seal at top.

Many dry cleaners now use two kinds of garment delivery bags: The sealed kind for garments in current use; and the famous Moth-Seal* bag for out-of-use garments that are likely to hang in the closet for some time. Research proves that proper dry cleaning (or laundering) destroys moths, moth worms and eggs. The Moth-Seal* Storage Bag when completely sealed prevents moths from reaching the clean garment. Here is one sure way to prevent moth damage: *Expert cleaning plus Moth-Seal* Storage Bag protection.* Lincoln Bag Company, 1529 Armitage Avenue, Chicago, Illinois.

*Name Registered U. S. Patent Office

MOTH SEAL

YOUR REGULAR CLEANER OR LAUNDRYMAN CAN FURNISH MOTH-SEAL* BAGS

Moth Seal advertisement will reach 2,000,000 buyers through the April issue of Good Housekeeping. It will mean more Moth Seal sales for you.

National advertising

WILL MEAN

MORE SALES for your customers
MORE SALES FOR YOU!

★ Starting with the April issue of Good Housekeeping magazine, Lincoln Bag Company is using full column space to tell the public about Moth Seal Bags, and the one sure way to secure real protection against moths.

This advertising, plus posters, stickers and inserts supplied free with each order, will bring increased good will from cleaners and laundrymen and a greater popular demand for Moth Seal Bags. *And it will mean more sales for you!*

Prepare now for this increased sales opportunity. Have plenty of Moth Seal Bags on hand at all times.

There's year 'round profits in Moth Seal Bags

LINCOLN BAG COMPANY

1529 Armitage Ave., Chicago, Illinois

on the lines of paper made by his firm and showed slides depicting the manufacture of the paper.

A sales meeting was recently held at the office of the Arnold-Roberts Company, conducted by Norman Harrower, president of Linton Brothers & Company, a foremost authority on Bristol board. Mr. Harrower related some very interesting enlightening facts about Bristol board. The attendance included outside salesmen. A. J. Campbell, in charge of the card board department of the Arnold-Roberts Company, presided.

Reddington Pitcher, assistant manager of the cardboard department of John Carter & Co., Inc., completed 48 years of service for that company Wednesday, February 24, and is going strong to make an even half-century. Mr. Pitcher, by devotion to the interests of his many customers, has attained a fine following among the printers of New England. Mr. Pitcher is a native of Maine and proud of it. He is known to the trade as "Red" Pitcher.

Arthur M. Burr, representative of the Cayuga Linen and Twine Mills, Auburn, N. Y., and the Badger Paper Mills, Inc., Peshtigo, Wis., who has been ill at his home in Melrose, Mass., for the last three weeks, hopes to return to his office this week.

Maurice E. Blackmur has resigned his position as sales promotion manager for the Storrs & Bement Company to go into advertising work.

Ernest S. Reid has become the Boston representative of the Wortendyke Manufacturing Company, Richmond, Va., manufacturers of grocery bags and gummed tape.

A. C. Wiswall, president of the Consolidated Paper Box Company, Somerville, Mass., left for West Palm Beach, Fla., last week to see his father, C. A. Wiswall.

Charles K. Shaw, treasurer of the Shaw Paper Box Company, Pawtucket, R. I., who has many friends in the trade in Boston and vicinity, has returned from a three weeks vacation in Florida.

Among the new corporations filed with the Massachusetts Commissioners of corporations is that of the Caplan Company, Inc., Boutelle street, Fitchburg, to deal in scrap iron, rubber, rags and paper, with a capital stock of 190 common shares having no par value. Leo Caplan is president; Edward B. Caplan, treasurer and clerk, and Edward Caplan the third incorporator.

Aldine Paper Co.'s New Quarters

One of the finest equipped and most modern quarters in the paper industry today are the new offices and warehouse of the Aldine Paper Company, of which H. E. Gould is president. They are located at 373 Fourth Avenue, New York. The entire construction and decorations were done under contract by William Saulter, one of the leading decorators in the east.

The Aldine Paper Company, besides handling regular brands of paper, are noted for their specialty papers in the packaging, industrial and greeting card fields. They are one of the largest distributors of greeting card papers in the country, creating many of their own exclusive lines for which they have agents from coast to coast.

Some of the agents of the Aldine Paper Company on their exclusive papers are as follows: Alling & Cory, Buffalo, N. Y.; Bradner Smith & Co., Chicago, Ill.; General Paper Products Company, Columbus, Ohio; Midwestern Paper Company, Kansas City, Mo.; Blake, Moffitt & Towne, Los Angeles, Cal.; John Leslie Paper Company, Minneapolis, Minn.; Raymond & McNutt Company, Philadelphia, Pa.; Alling & Cory, Rochester, N. Y., and Nassau Paper Company, St. Paul, Minn.

Correction

Regarding the report of a speech made recently by Charles Vining, president of the Newsprint Association of Canada, before the Canadian Club in Montreal, which appeared on page 15 of the February 11 issue of the PAPER TRADE JOURNAL, the following communication from the speaker has been received:

"The heading states that I "predict $47.50 per ton for newsprint." This is erroneous in two ways:

"First, I made no prediction of any kind regarding market prices and emphasized that I was dealing only with the facts of the "economic price" since market prices are questions not of fact but of unpredictable variety of policies and opinions.

"Secondly, I mentioned $47.50 not as an economic price today but as the bare economic price at the end of 1935, taking operating results of Great Northern Paper Company as a criterion, and I said that the economic price today or for 1938 could not be stated precisely but obviously would be the 1935 figure of $47.50 plus production cost increases since 1935.

"To put it briefly: the heading is wrong, first, because I made and could make no prediction whatever of market prices and, secondly, because $47.50 is distinctly too low as a present "economic price."

"Probably the simplest way of clarifying what I said is to give you the relevant paragraphs from my speech which follow:

"What the figure would be for 1937 or 1938 I make no attempt to say, but it is obvious that it would be the 1935 figure of $47.50 plus subsequent increases in production costs. It is too early to be precise about these increases but it can readily be demonstrated to anyone who wishes to investigate that newsprint production costs have risen materially since 1935 and are still rising.

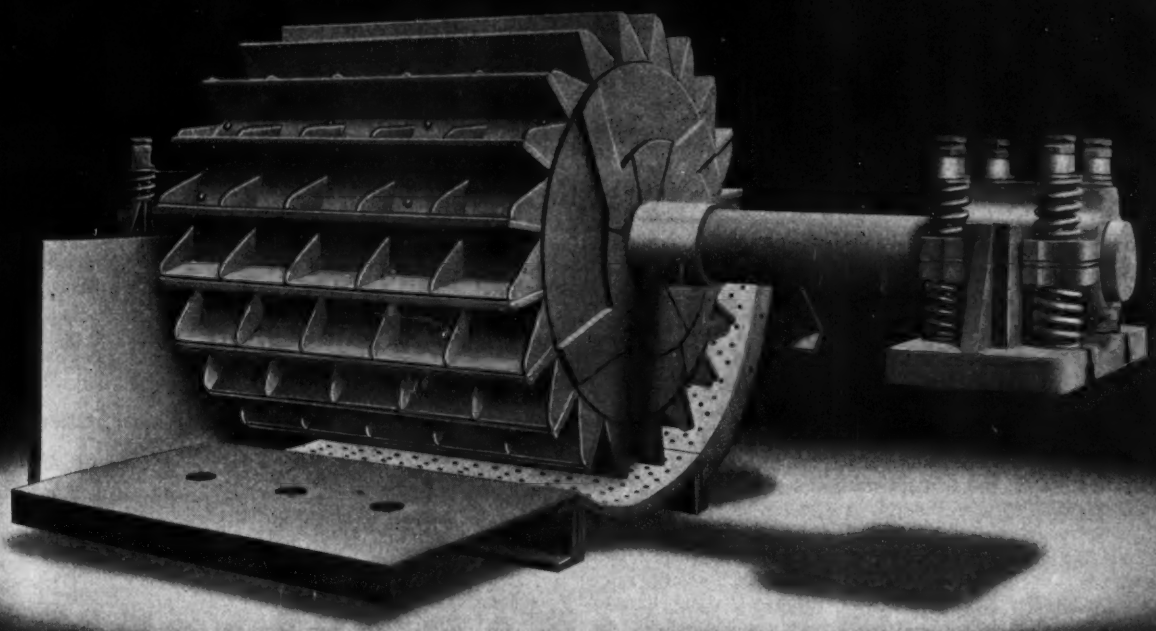
"Please let me make this clear. I am talking about an economic price. I am not talking about, nor suggesting, the market price which it might be expedient for a manufacturer to seek. The economic price is an item of fact; the market price is a matter of policy and judgment in which one would probably find a wide variety of opinion. I have nothing to say about policies. I submit only the fact that a bare economic price for newsprint in 1935, based on actual performance of a model producer, was approximately $47.50 and that a bare economic price today or for 1938 is $47.50 plus production cost increases. It is quite clear that in 1937, in spite of record demand for tonnage, the Canadian industry is entering its fifth consecutive year of operating at a substantial national loss."

Heads New Fire Control Project

To bring the newest scientific developments into forest fire control in the National Forests, and to coordinate the results of the past thirty years of experience, a special fire control planning project is being launched by the Forest Service, U. S. Department of Agriculture. To take charge of this work, the Forest Service announces the appointment of L. G. Hornby, at present in charge of the Division of Silvics at thhe Northern Rocky Mountain Forest Experiment Station, Missoula, Mont.

Mr. Hornby will maintain headquarters at Missoula, but will devote his attention to all National Forest regions. His duties will include examination of fire control methods used, or planned for use, suggestion of new methods, and analysis of each Region's fire problems.

Dilts



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DILTS MACHINE WORKS INC., FULTON, N. Y.

Government Paper Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 3, 1937 — The Mathers-Lamm Paper Company have been awarded the contract for furnishing the Government Printing Office with 1,275 sheets of 20 x 25 inch green gummed paper at $12 per one thousand sheets, bids for which were received on February 8.

The Printing Office received the following bids for 42,600 pounds (300,000 sheets) of 33 x 44 inch super-calendered book paper; Whitaker Paper Company, 5.7 cents; R. P. Andrews Paper Company, 5.7 cents; Barton, Duer & Koch Paper Company, 5.7 cents; Dobler & Mudge, 5.96 cents; Stanford Paper Company, 5.7 cents; Reese & Reese, Inc., 5.7 cents and 5.55 cents; Cauthorne Paper Company, 5.7 cents; John F. Post, Inc., 5.96 cents; and Edgewater Paper Company, 5.85 cents.

For 57,500 pounds (500,000 sheets) of 50 per cent rag, light weight high M. F. book paper; Old Dominion Paper Company, 11.673 cents; Whitaker Paper Company, 11.55 cents; R. P. Andrews Paper Company, 13.41 cents; Paper Corporation of U. S., 11.95 cents; and Mathers-Lamm Paper Company, 11.43 cents.

For 2,000 sheets of 24 x 36 inch brown cloth lined paper; Whitaker Paper Company, $133.13 per one thousand sheets; Walker-Goulard-Plehn Company, $133.15; Mathers-Lamm Paper Company, $139.00; R. P. Andrews Paper Company, $138.00; Barton, Duer & Koch Paper Company, $134.00; Reese & Reese, Inc., $134.00; Virginia Paper Company, $137.30; J. R. Howarth Paper Company, $136.00; Gauss Paper Company, $141.50 and $144.76 less 2 per cent; and Dobler & Mudge, $135.90.

Reese & Reese, Inc., will furnish 510 sheets of No. 1 jute tag at $17, bids for which were received on February 12.

The Lanston Monotype Company will furnish 16,700 pounds of monotype machine paper at 9.5 cents per pound, bids for which were opened informally.

Container's Trailer Operations

CHICAGO, Ill., March 1, 1937—W. D. Jackson, Jr., of the Container Corporation of America, writes interestingly of the use of trailers in the transportation work of that company. His analysis is contained in a special section of the *Chicago Journal of Commerce* devoted to the utilization of trucks by Chicago firms. Mr. Jackson states that trailer equipment is favored by his company because the operations of the company and the affiliated Pioneer Paper Stock Company are of a shuttle nature primarily.

"The trend with us," says Mr. Jackson, "is definitely toward the tractor-trailer. In picking up the waste paper which is our raw material, it is our practice to have a tractor drop a trailer and return to pick up others for loading. By the time one or two more have been set out it is time for the tractor to return and pick up the first trailer, now loaded."

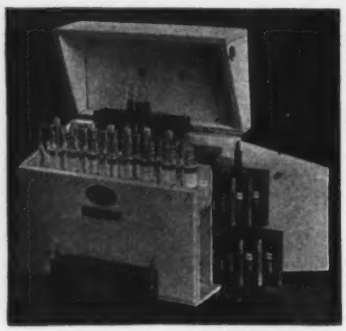
"If we were to use trucks only," adds Mr. Jackson, "we would need nearly as many equipment units as we now have and they would of course be more expensive. Further, so far as the motor is concerned, it would be idle much of the time whereas we can use tractor power units almost continuously."

Container and its subsidiary operate about 45 to 50 trucks and tractors in Chicago alone. Two types of trailers are used, the so-called lightweight with a five ton capacity and the heavyweight with a capacity of twenty tons. In trailer operation costs per power unit per day is higher it would be with trucks but the cost per ton handled is lower.

New pH Outfit

A new, portable pH outfit, the Long Range Slide Comparator, has been developed by W. A. Taylor & Co., 872 Linden Avenue, Baltimore, Md. It is made in seven models (T-3 to T-9) to cover the range of any 3 to 9 indicators respectively between the limits of pH 0.2 and pH 13.6.

The outfit contains a comparator base, which fits into a compartment in the front of the case; any 3 to 9 color



LONG RANGE SLIDE COMPARATOR.

standard slides, which are contained in two compartments in the back of the case; vials of the corresponding indicator solutions with 0.5cc pipettes and nipples; and 14-5cc test tubes.

A door on the end of the case keeps the base and slides in place when the case is being carried and, when opened, allows the proper slide to be selected for making determinations. The lid is fastened down with spring catches and is provided with a handle for carrying the outfit.

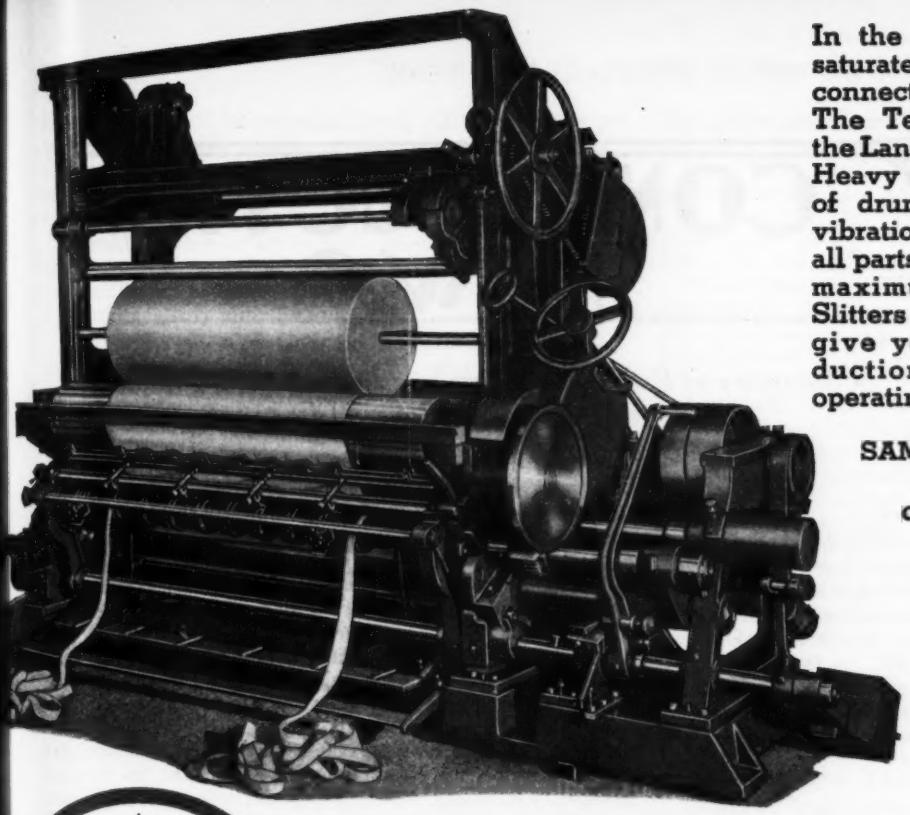
All equipment necessary for making tests is contained in the case so that these sets are ideal for field as well as for laboratory and plant work.

Microburette for Testing the Absorptiveness of Thin Paper

A new instrument, known as a microburette, has been designed by F. T. Carson, of the National Bureau of Standards Paper Section, to test the absorptive quality of thin papers, such as tissues. The instrument, which was fully described in the January number of the Bureau's Journal of Research (RP959), consists of a capillary tube, with a sliding index, mounted on a pivoted support in such manner that it can be adjusted to any angle of inclination. Increasing the slope an appropriate amount causes the water column in the capillary to move the length of the slider, and thereby to displace a correspondingly accurately measured volume that hangs as a drop from the discharge tip. The drop of water is then taken off on the paper to be tested by pressing down a lever, and the time of absorption is measured with a stop watch.

The drop of water ordinarily dispensed in making a test with this instrument is about the size of a BB shot. Notwithstanding its small size, this volume of water is repeatedly measured and dispensed with an uncertainty of only a very few parts in a hundred. Although designed particularly for the testing of paper, the microburette may find other uses involving the precise dispensing of small amounts of liquids.

Separate copies can be secured from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents each.



In the preparation of asphalt saturated felt for distribution in connection with special uses The Texas Company employs the Langston Type "AA" Slitter. Heavy construction; balancing of drums and idlers, prevent vibration. Bearings, gears and all parts proportioned to assure maximum service. Langston Slitters and Roll Winders will give you high-quality production combined with low operating cost.

SAMUEL M. LANGSTON COMPANY
CAMDEN, NEW JERSEY

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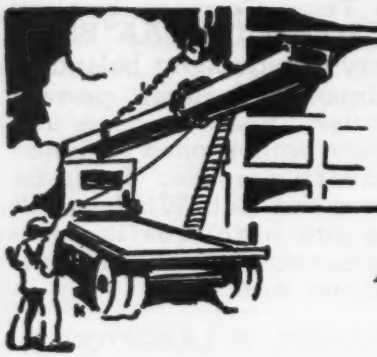

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Nashua, N. H.—The Nashua Gummed and Coated Paper Company, Franklin street, manufacturers of gummed and other processed paper stocks, has approved plans for new one-story addition to mills, for which superstructure will be placed under way at once. General erection contract has been awarded to the Morton C. Tuttle Company, Park Square Building, Boston, Mass. New unit will cost over $50,000, with equipment. Leland & Larsen, 20 Providence street, Boston, are architects and engineers.

Jacksonville, Fla.—The National Container Corporation, Review and Borden avenues, Long Island City, N. Y., manufacturer of corrugated boxes and containers, has concluded negotiations for City Council, Jacksonville, for acquisition of former local plant of American Agricultural Chemical Company, Talleyrand avenue, and adjoining property, now held by municipality, as site for new kraft pulp and paper mill, and will take over the buildings and land at early date. Present structures will be remodeled and improved, and new units for proposed mill, including mechanical departments for operating service. Plant will be equipped for initial capacity of about 200 tons of kraft paper board per day, which will be used at company converting plant in Long Island City, noted. Facilities will be provided at new mill for employment of about five hundred persons. Company is also securing lease of timber properties for raw material supply, covering slash pine tracts in that area, and will install sawmills and other facilities for production. Entire project is reported to cost in excess of $2,500,000. Samuel Kipnis is president.

Port Angeles, Wash.—The Fibreboard Products, Inc., manufacturer of sulphite and pulp board products, will soon begin foundations for a new addition to mill, to be equipped as a digester unit. Award for work has been let to the Olympia Pile Driving Company, Port Townsend, Wash. Contract for erection of superstructure will be awarded soon. The Commercial Boiler Works, 53 West Lander street, Seattle, Wash., will furnish certain equipment for the new addition. No estimate of cost has been announced. Main office of company is in the Russ Building, San Francisco, Cal.

Westport, Conn.—The Connecticut Fibre Board Company, Inc., has been formed with capital of $50,000, to operate a mill in this vicinity for the production of fiber board specialties. Incorporators of new company include Samuel E. Friedman and Rudolph Stern, 1991 North avenue, Bridgeport, Conn.

Montgomery, Ala.—The Maxwell Manufacturing Company, Montgomery, manufacturer of folding paper boxes and containers, will carry out expansion and improvements in former mill of the Montala Mill Company in West End district, recently acquired, and will install equipment for new plant. Proposed to begin work at once. Large capacity will be developed.

Boston, Ohio—The Gerald T. Shipman Company, London, Ont., manufacturer of paper products, has concluded negotiations for purchase of paper mill of the Chase Bag Company, Cleveland, Ohio, at Boston, near Hudson, Summit County, Ohio, comprising several buildings on 12-acre tract of land. The plant has been idle for some time past, and was secured for a reported consideration of close to $400,000. New owner will remodel and improve, with installation of equipment to develop a capacity of about 100 tons per day. It is expected to push the work to early completion, having mill ready for service in April, when employment will be given to approximately 100 men.

Milford, N. J.—The Riegel Paper Corporation, manufacturer of glassine and other processed paper stocks, has approved plans for three new additions to local mill, comprising two one-story structures, 40 x 290 feet, 60 x 175 feet, respectively, and two-story unit, 100 x 120 feet. New buildings will be used in part for storage and distribution. General erection contract has been let to the Austin Company, 16112 Euclid avenue, Cleveland, Ohio, and Commercial Trust Building, Philadelphia, Pa., and work will be placed under way at once. Entire project is reported to cost over $100,000, with equipment. Main offices of company are at 342 Madison avenue, New York, N. Y.

Brooklyn, N. Y.—The Prompt Paper Box Company, Inc., 206 Walabout street, manufacturer of paper boxes and containers, has arranged for lease of four-story factory at 32-34 Franklin avenue, Brooklyn, and will occupy for new plant. Improvements will be made in structure and equipment installed for increase in present capacity. It is proposed to have the unit ready for service early in May.

Chicago, Ill.—The Lanzit Paper Company, 2535 Rockwell street, manufacturer of paper products, has awarded general contract to Paul Schwendener, 8114 Cornell avenue, for alterations and improvements in plant at address noted. Work will be placed under way at once. No estimate of cost has been announced. H. A. Braun, 123 West Madison street, Chicago, is architect.

Everett, Wash.—The Soundview Pulp Company, manufacturer of bleached sulphite pulp products, is completing plans and plans immediate work on proposed mill expansion, recently referred to in these columns, consisting of a third mill unit. New additions will be constructed to three present mill buildings and considerable new equipment installed, including machinery for expansion in acid plant, digester department, screening and bleaching divisions, filter plant and other departments.

Mill capacity will be increased from 320 to 450 tons per day, or over 13,000 tons per month. Completion is scheduled in July. Entire project is estimated to cost close to $1,300,000, and financing has been arranged. Leo S. Burdon is general manager.

Franklin, Ohio—Fire recently damaged portion of the two-story plant of the Fiberware Corporation, Franklin. The mill has been idle for some time past. No estimate of loss has been announced.

Marrero, La.—The Celotex Corporation is completing an expansion and modernization program at mill at Marrero, to provide for large increase in former capacity, and will place plant on increased production schedule at early date. The output of insulation board specialties will be advanced close to 250,000 square feet per day. The improvement program has been in progress for a number of weeks and represents an investment of about $300,000, of which approximately $200,000 covers building construction and modernization, and $100,000 machinery and equipment. Former steam dryers in No. 1 mill have been converted to direct-fired units. Main offices of company are at 919 North Michigan avenue, Chicago, Ill. B. G. Dahlberg is president.

Toronto, Ont.—Gair Company of Canada, Ltd., Toronto, operating the local mill of the Canadian Paperboard, Ltd., on Bay street, under lease, has concluded arrangements for the purchase of the property and stockholders of the last noted corporation have approved the sale for a consideration stated at $612,500. Present leasing agreement expires on March 31, when new owner will take title to the property and will develop as one of main mills of company in this area. Company is the Canadian subsidiary of the Robert Gair Company, 155 East Forty-fourth street, New York, N. Y., and specializes in the production of paper and fiber board stocks, kraft wrapping papers, etc. George W. Brown is vice-president and general manager.

Thunder Bay, Ont.—The Marathon Paper Mills Company, Rothschild, Wis., is considering construction of a new mill in vicinity of Thunder Bay, reported to cost in excess of $100,000, including equipment. It is proposed to carry out the project later in 1937.

Gateshead-on-Tyne, England—The British Coated Board and Paper Mills, Ltd., London, England, manufacturer of processed paper stocks, paperboard products and kindred paper specialties, has concluded arrangements with the North-Eastern Trading Estates, Ltd., Gateshead-on-Tyne, for construction of a large mill on tract of land owned by last noted company. It will comprise several one-story units, reported to cost in excess of $500,000, with machinery. Work on project is scheduled to begin at early date.

New Companies

Newark, N. J.—The Newark Paper and Bag Company, Inc., has been incorporated with capital of 100 shares of stock, no par value, to deal in paper products of various kinds, paper bags and containers, etc. New company is represented by Frederick Jay, 24 Commerce street, Newark, attorney.

Dover, Del.—The New England Tape Company has been chartered in Delaware under direction of the United States Corporation Company, Dover, with capital of 100 shares of stock, no par value, to manufacture and deal in paper tape and kindred products, processed tape specialties, etc.

Merrill, Wis.—The Ward Paper Company has been incorporated to manufacture and deal in paper products. The incorporators include J. M. Ward, George L. Ruder and D. C. Everett, all of Merrill.

New York, N. Y.—The Ideal Label Corporation has been organized with capital of 100 shares of stock, no par value, to manufacture and deal in paper labels and kindred paper goods. New Company is represented by Henry E. Kaltun, 1450 Broadway, attorney.

Watertown, N. Y.—The Stewart Paper Corporation, Watertown, has been incorporated with capital of 200 shares of stock, no par value, to manufacture and deal in paper products. New company is represented by Carl J. Hynes, Otis Building, Watertown.

Hartford, Conn.—The General Envelope Company, 18 Allendale road, has filed notice of company organization to manufacture and deal in commercial envelopes and kindred paper products. New Company is headed by Maurice Richmond and Louis Berkowitz, Brighton, Mass., and Benjamin Pollack, Dorchester, Mass.

Cohoes, N. Y.—The United Fibre Company, Inc., has been chartered with capital of $10,000, to manufacture and deal in fiber specialties. New company will be identified with the Excelsior Stationery Company, 116 Nassau street, New York.

Detroit, Mich.—The National Tag Company of Michigan, Inc., 307 Stormfeltz-Loveley Building, Detroit, has been incorporated with capital of 100 shares of stock, no par value, to manufacture and deal in paper tags, labels and kindred paper goods. E. J. Sichel is one of the incorporators.

Hartford, Conn.—The Hartford Paper Company, 294 Pleasant street, has filed notice of organization to deal in paper products. Company is headed by Edward M. Cohen.

Chicago, Ill.—The Chicago Stationers, Inc., 511 Plymouth Court, has been incorporated with capital of 500 shares of stock, no par value, to deal in paper products and kindred stationery specialties. The incorporators include Arch Wolfe and S. Conley.

Will Convene At Atlantic City

The American Pulp and Paper Mill Superintendents Association, Pennsylvania, New Jersey and Delaware Division, will hold its 1937 convention at the Ritz-Carlton Hotel, Atlantic City, April 30-May 1.

This marks the first time the superintendents have ever met at the seashore, Atlantic City having been selected over several other cities in the territory at a dinner and meeting of the officers in Philadelphia February 13. With an increasing membership in six states and with Atlantic City's attractions as a new inducement, Association Chairman Harry C. Busser, of the York Haven Paper Company, and Mrs. Alice R. Dow, of Nutley, N. J., secretary-treasurer, are aiming for a record attendance.

In addition to the business sessions there will be a banquet, entertainment and dance; group luncheons, and a special ladies' program, including a bridge tournament and an outing on the Steel Pier.

H. H. Stafford Addresses Paper Salesmen

There was an excellent attendance at the regular luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry, which was held on Monday in the Florentine Room of the Hotel Lexington, New York.

H. H. Stafford, of Babson's Statistical Bureau, was the guest speaker. He discussed prevailing business conditions and the outlook for the future, regarding which he was optimistic.

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COMING EVENTS IN THE PAPER INDUSTRY

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, Annual Meeting, Springfield, Mass., June 23-25.

SOCIAL SECURITY ACT CHANGES

Important changes in the Social Security Act are advocated by a committee of the Chamber of Commerce of the United States. The report will be put before the Chamber's Annual Meeting in April for action by the membership.

Expressing approval of the stated purposes of the Act, to give workers greater security in old age and against unemployment, the committee proposes substantial changes in financial methods set up under the Act.

Questions of constitutionality are not dealt with in the report, the committee holding that these matters can be left very properly for judicial determination.

The foremost change urged by the committee is abandonment of any appearance of dependence upon actuarial reserves in connection with the old-age benefit plan. The committee holds that such a procedure, necessary for private insurance companies, is wholly inconsistent with government operation of a pension system.

If the provisions for great reserves are kept in the government plan, the committee foresees added ultimate costs to employers and employees, as well as to general taxpayers, with possible diversion of taxes on wages in directions precluding any benefit to the workers. The committee thinks that for reserves there should be substituted definite obligations of the government, and that these obligations should be reported publicly with the same regularity as statements of the public debt. The effect, in the committee's opinion, would be adoption of the most desirable principle of government operation,—pay as you go.

The committee believes there is an excellent opportunity for demonstration of the correctness of its recommendations. This opportunity exists because the taxes collected under the Social Security Act at the initial rate of one per cent on employer and one per cent on employee will yield more than enough revenue to meet for years all expenditures under the Act. The committee accordingly recommends that Congress should at once extend those initial rates until 1947. The interval could be used to work out the problems now presented by the Security Act, and no one would meanwhile fail to receive any benefit to which he is entitled by reason of the existing law.

Equal contributions by employers and their employees in financing both the federal old-age benefit system and the complementary state unemployment benefit systems are advocated by the committee in the interest of assuring effectiveness of operation and administration. The present law provides for equal contributions for support of old-age benefits but it does not require employee contribution under complementary state unemployment laws.

The committee points out that the task of organizing administration of a system extending initially to more than twenty-five million wage and salary workers is unprecedented in its difficulties. Consideration of coverage beyond the classes of industrial and commercial employees now subject to the Act should, therefore, the committee believes, await working out of successful administration of the present law. Gradual extension of the old-age benefit system to workers not now covered, the committee suggests, may become both feasible and desirable, as appropriate changes in the tax and benefit rates are made, and as successful methods of administration are developed.

The committee points out that government-operated pension measures have for their purpose provisions for assuring workers that upon reaching retirement they will not be dependent upon public relief. This purpose, the committee says should be maintained, and there should be reliance upon private plans for any supplementary income for retired workers.

In this connection the committee urges that the federal and state governments should facilitate the changing over of existing private pension plans. The formulation of further plans, to supplement the government system, should be encouraged. In particular the committee recommends that such plans should be free from taxation, in order that all money intended for the benefit of workers may be devoted exclusively to that purpose.

Respecting the federal tax on employers for unemployment benefit purposes, the committee points to the impropriety of the present provisions in levying this tax on total payrolls, including compensation of highest paid officers. It urges that the basis for this federal payroll tax should be made the same as the basis for the other federal payroll tax, namely, earnings up to $3,000 a year for any employee.

Administration of the unemployment reserve funds, the committee recommends, should be coordinated with the policies of the Federal Reserve System in order that

adverse effects upon general credit conditions may be avoided.

On the question of appropriate provisions of state unemployment benefit laws, the committee states:

"It would seem obvious that, in order to avoid engendering new causes of unemployment, all unemployment benefit legislation,—whether federal or state,—should be formulated as to provide adequate financial inducements for employers to sustain their working forces with the greatest continuity.

"Standards which must be met in state laws in order that employers of those states may receive credit against the federal payroll tax are of such a nature as to leave with the states considerable latitude respecting the kinds of incentives which the states themselves may give.

"There can be no justification for the imposition of restrictions on state discretion beyond those now embodied in the federal act. Indeed, these restrictions are justifiable only in that they are designed to fix minimum periods, the length depending upon the type of plan adopted, for accumulation of reserves before the states may take steps to enable employers with favorable labor turnover experience to reduce their tax obligations.

"With respect to the form of state laws, it is our view that every such law should contain provisions for merit rating,—i. e., provisions for differential tax rates with the lowest rates being set for enterprises and industries that maintain the highest degree of stability of employment. We also urge that the states include optional provisions for enabling well-established enterprises to maintain separate unemployment reserve accounts for their own employees, with tax payments required under these laws being credited to such accounts for exclusive use in paying benefits to these employees."

New Wood Research Project

The International Wood Research Exploitation Company, Ltd., was recently formed in Vienna with the object of investigating all the latest methods of timber utilization, and after obtaining experts' opinion on them, to turn these with the best prospects to practical use. A link has thus been created between the timber industry and the inventor on the one hand, and capital and manufacturing interests on the other.

The new company was formed with the collaboration of the Timber Utilization Department of the Comité International du Bois (C. I. B.), with which it will remain in close contact in its future activities. The necessary collaboration of influential experts and those interested in the timber industry will thus be assured.

Gair Buys Canadian Mills

E. Victor Donaldson, president of Robert Gair Company, Inc., New York, announces that the shareholders of Canadian Paperboard Company, Ltd., have accepted the offer of Robert Gair Company, Inc., for their properties, which consist of paper board mills at Montreal, Campbellford, Frankford, and Toronto, Canada. These mills have been leased by Robert Gair Company, Inc., since 1934.

Production Ratio Report

The following statistics are based upon paper production reports to the American Paper and Pulp Association:

COMPARATIVE MONTHLY SUMMARIES

Months	1937	1936	1935	1934
January	90.3%(c)	76.1%	65.8%	.....
February	.....	77.9%	70.0%	.....
March	.....	76.0%	70.5%	.....
April	.....	82.3%	70.0%	.....
May	.....	81.6%	69.4%	.....
June	.....	80.7%	72.3%	.....
July	.....	77.3%	64.9%	.....
August	.....	81.5%	70.9%	.....
September	.....	80.5%	71.9%	58.2%
October	.....	87.6%	75.6%	64.7%
November	.....	88.0%	75.3%	61.7%
December	.....	85.9%	71.2%	59.6%
Year Average	.....	81.3%	70.5%	.....
Year to Date				
First 7 weeks	89.7%(c)	76.5%	67.1%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1937		CORRESPONDING WEEKS, 1936	
*February 6	88.2%(c)	February 8	77.5%
*February 13	89.5%(c)	February 15	77.0%
*February 20	88.9%(c)	February 22	78.5%

The following statistics show the number of mills reporting by ratio groups:

Ratio Limits	Number of Mills Reporting, Current Weeks: Feb. 6, 1937	Feb. 13, 1937	Feb. 20, 1937
0% to 50%	46	36	27
51% to 100%	265	275	183
Total Mills Reporting	311	311	210

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported on January 4, 1937 Machine Improvement Survey.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

Months	1936	1935	1934	Months	1936	1935	1934
January	61%	61%	....	July	69%	59%	....
February	67%	67%	....	August	75%	65%	....
March	68%	67%	....	September	76%	69%	62%
April	70%	61%	....	October	82%	76%	63%
May	68%	61%	....	November	79%	70%	56%
June	68%	65%	....	December	74%	60%	52%

Week ending Jan. 9, 1937—77%
Week ending Jan. 16, 1937—79%
Week ending Jan. 23, 1937—82%
Week ending Jan. 30, 1937—81%
Week ending Feb. 6, 1937—86%
Week ending Feb. 13, 1937—86%
Week ending Feb. 20, 1937—85%

Ira B. Ogden Dead

BOSTON, Mass., March 1, 1937 — Ira B. Ogden, 57, New England agent for a number of paper mills, with office at 201 Devonshire street, Boston, Mass., died suddenly February 20, following an operation. Mr. Ogden, who was well and favorably known to the trade, had been active in Boston for 25 years. Previously, he had conducted a paper business in New York City for some ten years. In Boston, he represented the Schmidt & Ault Paper Company, of York, Pa.; the Racquette River Paper Company, Potsdam, N. Y., and the Mohawk Valley Paper Company, Little Falls, N. Y. His son, Gordon Ogden, who survives him and has been associated with him for some time, will conduct the business as before.

North Hoosick Plant Resumes

[FROM OUR REGULAR CORRESPONDENT]

HOOSICK FALLS, N. Y., March 1, 1937 —·The branch of the Stevens & Thompson Paper Company at North Hoosick is returning to activity after being idle for the past three years. The mill has already been reopened and it is planned to gradually increase operations. About 25 persons have been employed during the past few weeks and the plant at present is producing paper pulp for the Walloomsac plant.

"Now there's an OPAQUE sheet"

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ZINC SULPHIDE PIGMENTS IN PAPER

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Paper Machine Conversion Losses*

By John P. Hagenauer[1]

To produce a ton of paper on a paper machine, more than a ton of raw materials is required. Therefore, the factor expressing the relation of raw material furnished to finished paper produced supplies a measure for the efficiency of operation in any mill. Every mill knows this factor for its own operation, but in the past, no information on a comparative basis was available between mills except as operators discussed it by word of mouth during mill visits or group meetings.

Tabulations Indicate Staggering Losses

A number of outstanding progressive mills, realizing the value of comparable information, have furnished to the Cost-Engineering Service of the American Paper and Pulp Association for the last fifteen months, the necessary data for a study. An analysis of the results of the incompleted study are presented herewith. The study covers the losses occurring from the point where the raw materials are furnished to the beater to the point where the usable paper is taken from the paper machines. Included in this study are the reports of thirty paper mills. Our tabulations indicate staggering losses as to quantity as well as to value.

The Paper Machine Conversion Losses and Their Value in the Industry

In the following there is presented an analysis of the losses. There is no intention to present the results in a technical manner, but an attempt is being made to express these losses and their magnitude in loss of materials as well as money value to the entire industry.

TABLE I—ELEVEN YEAR LOSSES AND EQUIVALENT MONTHS OF SUPPLY

Based on Average Monthly Usage
Book, Writing and Sulphite Wrapping Groups—1925-1935 Inclusive

Furnish	LOSSES IN TONS Total Losses 1925-1935	Average Losses per Year	Average Usage per Month	Equivalent Months of Supply
Fiber	1,360,486	123,680	162,644	8.36
Clay	656,308	59,664	20,193	32.50
Size	76,694	6,972	1,515	50.62
Starch	80,925	7,357	1,725	46.91
Alum	115,336	10,485	1,311	87.98
Others	18,059	1,642	555	32.45
Total	2,307,808	209,800	187,943	

The production of book, writing and sulphite wrapping papers for the years of 1925 up to and inclusive of 1935 has been taken as the material furnished, and all losses determined on that basis. To the total production in the various groups, the average retention figures reported during the last fifteen months by the mills in question have been applied, and an average furnish established on this basis for each group. To this average furnish, the average price for the various materials has been applied to establish a furnish value. The resulting figures are shown in Tables II and III.

From Table II, we find that the total values of the furnish in the three groups for the eleven years are as follows:

For the book group $590,384,736
For the writing group 267,257,384
For the sulphite wrapping group.... 297,625,434

or a grand total value of the furnish of $1,155,267,554

The losses as they appear in Table III are as follows:

For the book group $43,623,944
For the writing group 19,247,989
For the sulphite wrapping group.... 26,602,647

or a grand total of $89,474,581

Major Loss Is Fiber

The major loss as to quantity as well as value is fiber, representing on an oven-dry basis, 5.85 of all fiber furnished for book, 5.74 for writing and 7.80 for the sulphite wrapping group. The loss of clay, 21.20 for book, 40.13 for writing and 55.40 for sulphite wrapping. Size, 38.15 for book, 33.06 for writing and 45.05 for the sulphite wrapping group. Starch, 44.03 for book, 21.39 for writing and 44.06 for sulphite wrapping. Alum, 73.93 for book, 89.78 for writing, and 50.29 for sulphite wrapping.

The losses as given here are in per cent of the total material furnished and are based on the weighted averages as reported for fifteen months by individual mills. The per cent of loss on the basis of total furnish during these eleven years was 9.31 in tonnage and 7.39 in value for the book group; 9.04 in tonnage and 7.20 in value for writing; and 9.52 in tonnage and 8.94 in value for sulphite wrap-

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 22-25, 1937.

[1] Member TAPPI, American Paper and Pulp Association, New York, N. Y.

LOSSES IN DOLLARS

Furnish	Value of Losses 1925-1935	Average Value Yearly Losses	Average Value Monthly Losses
Fiber	$69,384,786.00	$6,307,707.00	$525,642.00
Clay	6,070,849.00	551,895.00	45,991.00
Size	3,527,924.00	320,721.00	26,727.00
Starch	6,474,000.00	588,545.00	49,045.00
Alum	3,114,072.00	283,097.00	23,591.00
Others	902,950.00	82,086.00	6,841.00
Total	$89,474,581.00	$8,134,051.00	$677,837.00

TABLE II—TONNAGE AND VALUE OF TOTAL FURNISH

Book, Writing and Sulphite Wrapping Groups—1925-1935 Inclusive

Furnish	Distribution of Materials in Furnish in Per Cent of Total	Tons Furnished	Cost per Ton	Cost of Furnish
Book—				
Fiber	81.28	10,883,734	$51.00	$555,070,434.00
Clay	16.71	2,237,539	9.25	20,697,235.75
Size	0.42	56,240	46.00	2,587,040.00
Starch	0.82	109,802	80.00	8,784,160.00
Alum	0.62	83,021	27.00	2,241,567.00
Others	0.15	20,086	50.00	1,004,300.00
Total		13,390,422		$590,384,736.75
Writing—				
Fiber	89.74	4,941,054	51.00	251,993,754.00
Clay	6.56	361,191	9.25	3,341,016.75
Size	1.44	79,286	46.00	3,647,156.00
Starch	1.55	85,342	80.00	6,827,360.00
Alum	0.40	22,024	27.00	594,648.00
Others	0.31	17,069	50.00	853,450.00
Total		5,505,966		$267,257,384.75
Sulphite Wrapping—				
Fiber	95.47	5,643,231	51.00	287,804,781.00
Clay	1.13	66,794	9.25	617,844.50
Size	1.09	64,430	46.00	2,963,780.00
Starch	0.55	32,510	80.00	2,600,800.00
Alum	1.15	67,977	27.00	1,835,379.00
Others	0.61	36,057	50.00	1,802,850.00
Total		5,910,999		$297,625,434.00
Combined—				
Fiber		21,468,019		$1,094,868,969.00
Clay		2,665,524		24,656,097.00
Size		199,956		9,197,976.00
Starch		227,654		18,212,320.00
Alum		173,022		4,671,594.00
Others		73,212		3,660,600.00
Total		24,807,387		$1,155,267,556.00

ping. For all groups combined the loss was 9.30 in tonnage and 7.74 in value.

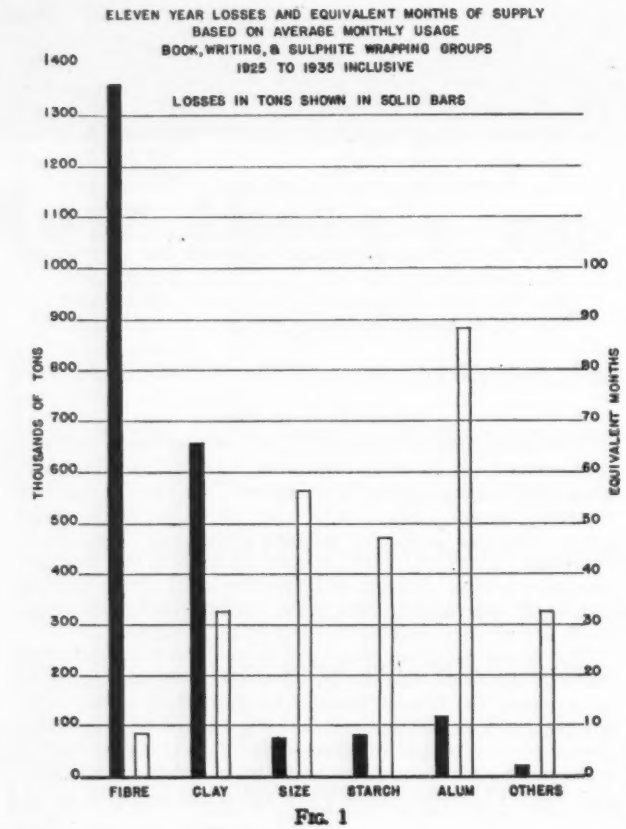


Fig. 1

In Table I there are given the losses for various furnish items for eleven years; the average loss per year; the average usage per month; and the equivalent months of supply based on the average usage represented by the losses in the eleven years. Expressed as equivalent months of supply, the three groups of the industry, book, writing and sulphite wrapping, could have operated for about 8½ months on the fiber loss, 32½ months on the clay loss, 50½ months on the size loss, 47 months on the loss of starch, 88 months on the loss of alum, and 32½ months on the loss of other materials. The eleven year losses in thousands of tons and the equivalent months of supply based on usage per month are graphically shown for the various furnish materials in Fig. I.

Table I also shows the losses expressed in dollars for

TABLE III.—TONNAGE AND VALUE OF FURNISH LOSSES

Book, Writing and Sulphite Wrapping Groups—1925-1935 Inclusive

Losses	Losses in Per Cent of Material Furnished (Bone Dry)	Losses in Tons	Per Cent of Total Furnish	Losses in Dollars	Per Cent of Total Value
Book—					
Fiber	5.85	636,698		$32,471,598.00	
Clay	21.20	474,358		4,387,811.50	
Size	38.15	21,456		986,976.00	
Starch	44.03	48,346		3,867,680.00	
Alum	73.93	61,377		1,657,179.00	
Others	25.16	5,054		252,700.00	
Total		1,247,289	9.31	$43,623,944.50	7.39
Writing—					
Fiber	5.74	283,616		14,464,416.00	
Clay	40.13	144,946		1,340,750.50	
Size	33.06	26,212		1,205,752.00	
Starch	21.39	18,255		1,460,400.00	
Alum	89.78	19,773		533,871.00	
Others	28.45	4,856		242,800.00	
Total		497,658	9.04	$19,247,989.50	7.20
Sulphite Wrapping—					
Fiber	7.80	440,172		22,448,772.00	
Clay	55.40	37,004		342,287.00	
Size	45.05	29,026		1,335,196.00	
Starch	44.06	14,324		1,145,920.00	
Alum	50.29	34,186		923,022.00	
Others	22.60	8,149		407,450.00	
Total		562,861	9.52	$26,602,647.00	8.94
Combined—					
Fiber		1,360,486		69,384,786.00	
Clay		656,308		6,070,849.00	
Size		76,694		3,527,924.00	
Starch		80,925		6,474,000.00	
Alum		115,336		3,114,072.00	
Others		18,059		902,950.00	
Total		2,307,808	9.30	$89,474,581.00	7.74

TABLE IV.—MAXIMUM AND MINIMUM RETENTIONS IN PER CENTS AS REPORTED FOR VARIOUS MATERIALS BY PRODUCT GROUPS

	Clay		Size		Starch		Alum	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Book	92.58	43.00	91.96	35.00	100.00	25.00	92.58	9.00
Writing	70.00	31.00	92.00	50.00	100.00	35.00	20.00	9.00
Sulphite Wrapping	50.00	40.00	75.00	40.00	66.00	50.00	90.00	6.00

TABLE V.—PER CENT OF RETENTION

(Total Furnish = 100)

Product Group	Maximum	Minimum	Average
Book	87.10	65.33	70.25
Writing	84.12	68.31	76.88
Sulphite Wrapping	87.20	72.52	79.91
Board	86.70	76.80	84.32
Kraft	87.20	81.30	84.01
Tissue	80.91	79.04	79.88

TABLE VI.—PER CENT OF LOSS

(Total Furnish = 100)

Product Group	Maximum	Minimum	Average
Book	34.67	12.90	29.75
Writing	31.69	15.88	23.12
Sulphite Wrapping	27.48	12.80	20.09
Board	23 20	13.30	15.68
Kraft	18.70	12.80	15.99
Tissue	20.96	19.09	20.12

TABLE VII

Product Group	Ratio Fiber Plus Clay Gross to Gross Paper Made			Ratio Total Furnish to Gross Paper Made		
	Max.	Min.	Ave.	Max.	Min.	Ave.
Book	1.21	1.05	1.12	1.28	1.06	1.18
Writing	1.20	0.99	1.08	1.28	1.15	1.20
Sulphite Wrapping	1.14	1.03	1.10	1.24	1.10	1.16
Board	1.13	0.99	1.05	1.25	1.12	1.16
Kraft	1.19	1.09	1.12	1.22	1.12	1.15
Tissue	1.09	1.09	1.09	1.18	1.18	1.18

eleven years, per year and per month, for the various furnish items as well as for the total. The total loss of all furnish materials for the three groups combined was $89,474,581, or per year $8,134,051, the equivalent of $677,837 per month, which is a tidy sum.

The total tons of fiber lost in the eleven years was 1,360,486 tons. Assuming two cords of wood were required to produce a ton of fiber, we have the equivalent cords of wood wasted in the eleven years as 2,720,972. Assuming that five cords of wood were produced per acre of woodland, this loss represents the production of 542,194 acres, and the loss per year, representing a waste of wood production of 49,290 acres per year. This fiber loss can also be expressed in value of wood. Assuming $7.00 was the cost per cord of wood, and I doubt if many mills can buy it at this price, the wood wasted in the eleven years represents a value of $19,046,804.

Developments in the South indicate that a self-contained one machine mill can be built at an average cost of approximately $4,000,000. The yearly loss of furnish materials amounting to $8,134,051 then represents the approximate value of two self-contained one machine mills.

It is fully realized that it is impossible for the industry to come to a point where this entire loss could be recovered and made available for usage in the industry. However, even a 10 per cent saving on these tremendous yearly losses would represent about $800,000 which would be a direct net profit to the industry, and if applied to research, would considerably advance the industry at large.

The Ratio of Total Furnish to Gross Paper Made

In Table VII there is given a comparison of the ratios of total furnish to gross paper made for book, writing, sulphite wrapping, kraft and tissue papers. The ratios vary for the book group from a maximum of 1.28 to a minimum of 1.06 with a weighted average of 1.18; for writing from 1.28 to 1.15, and for sulphite wrapping from 1.24 to 1.10, etc.

The wide variations, between the maxima and minima of the various groups are indicative either of a lack of control in the mill or a lack of knowledge as to the accurate measurement of the amount of materials furnished. Considering that only outstanding mills in their particular fields have reported their figures with such wide variations, what would the results show if mills which are not as carefully managed reported their figures?

Ratio of Fiber Plus Clay Gross to Gross Paper Made

Similar variations as mentioned for the ratios of total furnish to gross paper made exist when the ratios of fiber plus clay gross are compared with gross paper made. The same wide variations occur, probably due to the same reasons.

The ratios of total furnish as well as the ratios of fiber plus clay gross to the total gross paper made are tabulated in Table VII.

Per Cent of Retention

The variations of the ratios previously discussed are naturally reflected in the per cent of retention of the total furnish in the finished paper. These per cents can be found tabulated in Tables V and VI.

Retention of the Various Furnish Materials

For all further analyses the machines whose predominating products are book, writing and sulphite wrapping papers will be used, inasmuch as the largest number of machines is available for study in these three groups. Without entering into a technical discussion as to the method of determination of the various retentions for the materials involved, there will be found tabulated in Table IV, the maxima and minima of retentions of clay, size, starch and alum, as reported by the individual mills for this study.

If the variation was great in the ratio figures, it is far exceeded in the retention figures shown in the table. Clay varies in per cent from a retention of 92.58 maximum for book to 43 as a minimum; for writing, from 70 maximum to 31; for sulphite wrapping, from 50 maximum to 40 minimum. Size varies from a retention of 91.96 maximum for book to 35 as a minimum; for writing from 92 maximum to 50 minimum; for sulphite wrapping, from 75 maximum to 40 minimum. Starch varies from a retention of 100 maximum for book to 25 as a minimum; for writing, from 100 maximum to 35 minimum; for sulphite wrapping, from 66 maximum to 50 minimum. Alum varies from a retention of 92.58 maximum for book to 9 as a minimum; for writing, from 20 maximum to 9 minimum; for sulphite wrapping from 90 maximum to 6 minimum.

Accuracy of the Figures Reported

Such wide variations between the maxima and minima naturally raise questions as to the accuracy of the figures reported. What method of analysis was used? How frequently are determinations made? Is there a uniform method of analysis? Does there exist any information to guide the mills as to what the retention should be of the various furnish materials for a given grade of paper? In other words, it opens a wide field for the technical men to get together, and through serious concentrated effort and through an industry-wide study, to do a real piece of constructive work, beneficial to all concerned.

Gallons of Water per Ton of Paper

The study provided for the reporting of the gallons of water used to produce a ton of paper. The figures reported in gallons are as follows: For book, a maximum of 47,000 and a minimum of 10,230. For writing, a maximum of 28,000 and a minimum of 25,900. For sulphite wrapping, a maximum of 25,558 and a minimum of 22,306.

Out of 30 mills included in the study, only five mills were able to report these figures. In view of the fact that there is a direct relation between the losses in the sewer and the amount of water used, it is surprising to note that so few mills are able to furnish these figures. Wherever possible the technical men should bring pressure to bear in their own individual mills to see that their mills are equipped to keep records of the gallons of water used per ton of paper.

A Challenge to Technical Men

The presentation of these figures at this meeting is made for a two-fold purpose. First, to bring to you the magnitude of the losses, and, second, to point out to you the value of cooperation between the cost department of the mill and the technical men. We technical men, when engaged in the laboratories on research, often lose sight of the fact that our value to our employers must be measured not in the amount of work that we do, but in the dollars and cents which we save our companies, and also of the fact that our advancement in the industry to higher and more responsible positions depends entirely on our ability to coordinate research with practical application, increased efficiency in operations and the resulting savings made in the cost of production. If you analyze the number of technical men in the industry and compare with it the number of those, who, from their ranks have advanced to higher managerial positions, you will find that this number is small, but you will also find that every one of that small number has had the ability to combine research with practical application, increased efficiency and savings to the company.

Design and Refining Action of Discs*

By D. Manson Sutherland, Jr.[1]

Abstract

The principles of refining discs in the light of the old and modern art are examined. The design of discs which can operate as closely as 0.0015 of an inch and still pass large quantities of pulp suspension is clearly shown.

Further light is given on the effect of varying gaps, pressures used on the discs, effect of tangential bars and grooves; and attention is directed to refining sulphate pulp or brown stock at high temperatures.

In my paper entitled Refining Action of Discs published in Technical Association Papers XIX 1936, a preliminary effort was made to explain the principle of disc design as well as the effect of the refining action of discs. This paper is intended to give additional explanations of the factors which are necessary to obtain the desired refining action in one pass and consequently both papers should be considered together in order to avoid too much repetition in this paper.

Prior Art Disc Design

One of the chief obstacles in the minds of students of disc refining is the problem of capacity. It is inconceivable to some that discs which are operating with a clearance of only 0.0015 of an inch can pass any appreciable amount of pulp either at high or low consistency. When discs are inspected at rest with such a small gap their suspicions are confirmed and as a matter of fact they are correct.

For example, if we assume a disc diameter of 36 inches and a gap of 0.003 inch, we have a discharge area of only .34 square inches. The amount of pulp that can be discharged through such a small orifice depends upon the speed of the discs, the consistency and flowing properties of the pulp suspension. It is naturally inconceivable that such a small area can discharge any appreciable amount of pulp. In the old art of attrition mill grinding it is common practice to increase the gap in order to increase capacity on any particular mill. Small diameters are used at very high speeds for low capacity and larger discs at slightly slower speeds for higher capacity, but the gap is the only variable under control of the operator for adjusting capacity and refining action.

Most attrition mill discs are designed with circumferential ribs forming the plane surface either at the periphery or at several points across the face and wherever these ribs come together they control the gap through which the pulp must pass. Fig. 1 shows a section of a typical attrition mill disc and Fig. 2 shows two sections face to face to illustrate restriction of flow.

In a disc of this design it is obvious that the inner circumferential ring has the same gap as at the periphery and since the centrifugal force is less and the area of the disc is increasing it cannot possibly pass sufficient pulp suspension to keep the balance of the area of the disc filled.

Other attrition mill discs are shown in Figs. 3 and 4 to further illustrate the old principle of disc design.

Modern Disc Design

In order to give a clear explanation of modern design it is necessary to reprint Fig. 1 from the 1935 paper which is now marked Fig. 5.

In this design particular attention must be directed to the check ring D since the gap at this point governs capacity as in Figs. 1, 2 and 3. Discs having a diameter of 48 inches and a gap of 0.003 inch allow only 0.45 square inch for discharge of pulp suspension and as with 36 inch discs this is insufficient area for practical purposes. Tests have shown that the discharge of a pair of discs must equal 12 square inches in order to discharge 100 tons of pulp per day at 3 per cent consistency and if it was necessary to depend upon the gap alone to obtain this capacity the discs would have to be over 50 feet in diameter.

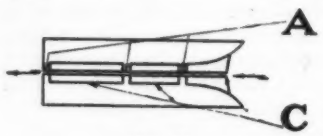


FIG. 2

A. Circumferential rings forming plane surface. B. Bars also forming plane surface. C. Recesses or spaces.

The speed of the discs does affect the capacity as high speeds and therefore high centrifugal forces will discharge more pulp suspension through 0.5 square inch than low speeds but it has been shown that high relative speeds are inefficient and waste power. Data on relative speeds of 1720 and 860 r.p.m. were reported in the Technical Association Papers XVIII, page 64, 1935, and the tests made since then on commercial scale confirm that high speed is unnecessary and far too expensive.

Referring again to capacity of discs it has been demonstrated that it is quite practical to discharge as much as 100 tons per day of sulphite, sulphate, and soda pulp at 3 per cent consistency through discs with a gap of 0.003. Tests have been made on discs with diameters of 29 inches, at 860 r.p.m., 42 inches at 450 and 360 r.p.m., 48 inches

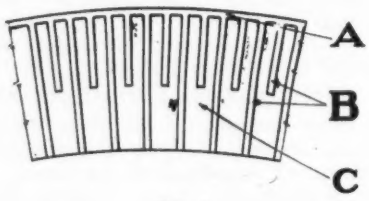


FIG. 3

Shows bars B with a circumferential ring A at the periphery. Both A and B are on the same plane surface. The gap at A controls the capacity that can be discharged.

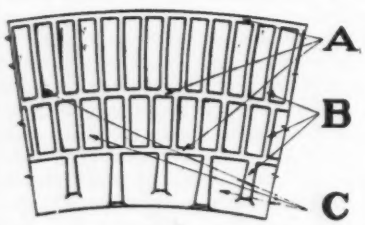


FIG. 1

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 22-25, 1937.

[1] Member TAPPI, Consulting Engineer, Trenton, N. Y.

at 400 and 600 r.p.m., and in each case 100 tons can be passed through in 24 hours but the stuff properties discharged in each case are different due to the impact and contact inches varying in each disc because of differences in diameter and speed.

Before explaining the method of obtaining high capacity between discs while maintaining a gap of 0.003 inch, it is important to realize the necessity of such close clearances. Owing to the design of discs and supporting structures in the prior art it was not possible to maintain a gap as close as 0.003 inch, but in the modern design under consideration in this paper it has been found possible to construct discs and structures which will be parallel within 0.0015 inch on discs 48 inches in diameter. Close clearances are necessary to obtain freeness drop and strength development in all types of beaters and refiners when the time factor is considered but it is still more important in a single pass refiner where the stuff properties must be developed in less than one second. Freeness drops of approximately 100 cc. on raw sulphite can be obtained at a gap of 0.030, 200 at 0.020, 300 at 0.005, and 500 cc. at practically zero.

The ideal refiner is, of course, one that will give the desired freeness drop and stuff properties at relatively wide gaps, say 0.020, because the life of the tackle will be longer. Everyone knows that tackle which is only brushing with a wide gap will wear longer than tackle which is running practically metal to metal, or metal to stone, as the case may be.

Now that the necessity of close gaps is shown for rapid refining action, we can return to the problem of passing large capacities through a pair of discs operating at a gap of 0.003 inch. Referring to Fig. 5, it is obvious that the discharge area can be increased at D by cutting orifices through its face. If the gap at 0.003 inch gives 0.5 square inches and we need a discharge area of 12 square inches, we must cut sufficient orifices to total this area, and if we look at the periphery of a pair of discs we observe the design as shown in Fig. 6.

The check ring face is again marked D and the orifices E. Since one disc is rotating we have a condition where the orifices are full open part of the time and one-half of the orifices is always open. Experiments have been conducted on discharge areas from 0.5 to 12 square inches on sulphite, sulphate, soda and ground wood screenings and capacities have varied from approximately 10 to 100 tons per day.

The main difference therefore between the modern art and the prior art used in attrition mills or any other type of refiner is the restriction of capacity at the discharge end of the refining tackle. This action has been accomplished on some jordans by restricting the through flow by means of a valve in the discharge line, but close study will show that this does not give the same effect on the pulp suspension and is very inefficient in power consumption.

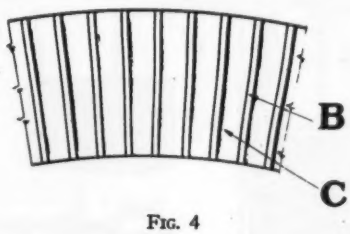


FIG. 4

Shows Bars B and channels or spaces C but without any circumferential rib. The discharge area in this design is much greater than in Fig. 3 because the area of the open channels or spaces must be added to the area due to gap. A disc of this type will have larger capacity than that shown in Fig. 3 but the refining action in one pass will be a great deal less.

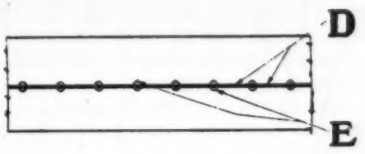


FIG. 6

In mill practice it is necessary to have the operator control the capacity and refining action so as to adjust the same to paper machine conditions and sheet properties as required. The production of any given paper machine varies with the weight and quality of the sheet and the condition of the machine clothing. A fourdrinier machine making glassine may range from 500 to 1000 pounds per hour according to grade and a fourdrinier making 16 point kraft liner may vary as much as 15 per cent in capacity.

In order to synchronize the capacity of a modern type of refiner with a paper machine, it is necessary to have adjustable orifice control separate from the adjustment of the gap. When a single rotation disc is used, this adjustment can be readily made on the stationary side although it is possible to adjust both sides by shutting down the rotating element.

One design of orifice controlling device is shown in Fig. 7 but other means can be employed to accomplish this most important function.

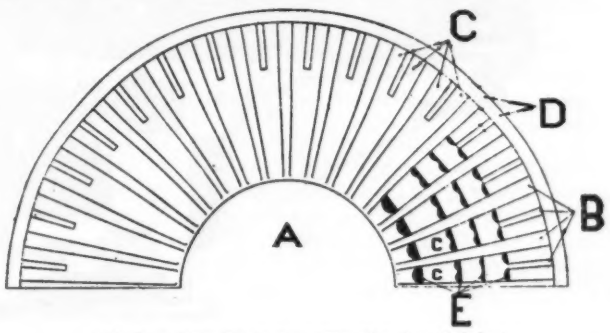
F is the orifice control ring, D check ring, E to E' orifices, B bars and C grooves. The orifice control ring F is designed to revolve around check ring D so that the orifices E' will be in alignment with E or can be moved so as to partly or completely shut off orifices E. The design of the refining disc should be such that the maximum capacity, freeness drop and strength development, is obtained for any given paper machine, and when less capacity is required the orifices are partially closed. Some operators might believe that it is better operating practice to shut off the supply of pulp at the inlet as is now done with jordans but theoretically this should be done at the check ring in order to maintain uniform stuff properties.

Mechanics of Disc Design

During the past year progress has been made in developing the mechanics of disc design as reported in Technical Association Papers XVIII 1935. One new factor which was overlooked in previous papers has been noted and additional data has been obtained on pressure between discs, design of grooves and bars, i. e., impact and contact inches.

Experiments have been carried out on a disc refiner on commercial scale. Fig. 8 shows a cross section of the refiner used.

When pressure tests are made the pulp suspension is passed at a continuous rate through the refiner while the



(U. S. and Foreign Patents allowed and applied for)

FIG. 5

discs are being kept at a definite gap by the hydraulic pressure. This gap is measured by micrometer H. The clamps J are loose and the pressure is maintained by manipulating the hydraulic valves so as to maintain a given gap. In this particular refiner the area of the piston is 142 square inches and the area of the surface of each disc is 1200 square inches.

Pressure

The avearge results obtained in three different mills on varying grades of pulps and different capacities are as follows:

Gap in inches	.0015	.005	.010	.020	.030
Piston Pressure in pounds per square inch	300.	250.	230.	190.	175.
Disc Pressure in pounds per square inch	35.5	29.5	27.2	22.5	20.

The pressure recorded above was taken as accurately as possible but the weight of the inlet tube and stationary head plus friction of piston packing and friction in the neck ring of the inlet elbow may influence the results.

Bars and Grooves

Fig. 5 shows radial grooves only, but since it is common practice in beaters and refiners to have tangential bars in one or both refining surfaces, tests have been made to ascertain the effect of tangential bars and grooves in discs. It is impossible in this paper to deal with more than one design although several are being used in commercial operations. The tests reported were conducted under the supervision of mill technicians so the data obtained is as accurate as can be determined under laboratory conditions. Before the results of using tangential bars are shown, it is necessary to call attention to the factor which was overlooked in previous papers as both factors are equally important in obtaining optimum stuff properties. This factor is called gap or clearance for want of a better term.

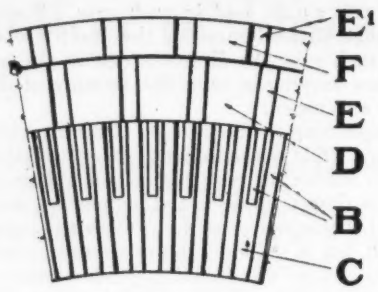


FIG. 7

Gap or Clearance

In beaters and refiners it is common practice to adjust the gap or clearance between the refining elements according to the beating or refining action required. In some cases the beater roll is run clear off the bedplate at the start of beating and lowered down on to the bedplate toward the end of the beating time. The adjustment of the plug in a jordan shell is also made to give different refining actions, consequently the effect of varying the gap or clearance between beating and refining surfaces has been known, but definite measurements are lacking. In research and development work on this important problem of stuff preparation it is necessary to be able to measure the gap with reasonable accuracy.

Referring again to Fig. 8 we note that the micrometer H is used to read the gap. Since a micrometer recording to 0.0005 is a delicate instrument and the manner of supporting the same is important to insure accuracy, it is necessary when making tests to reset the micrometer to zero. This is done by forcing the discs together under low hy-

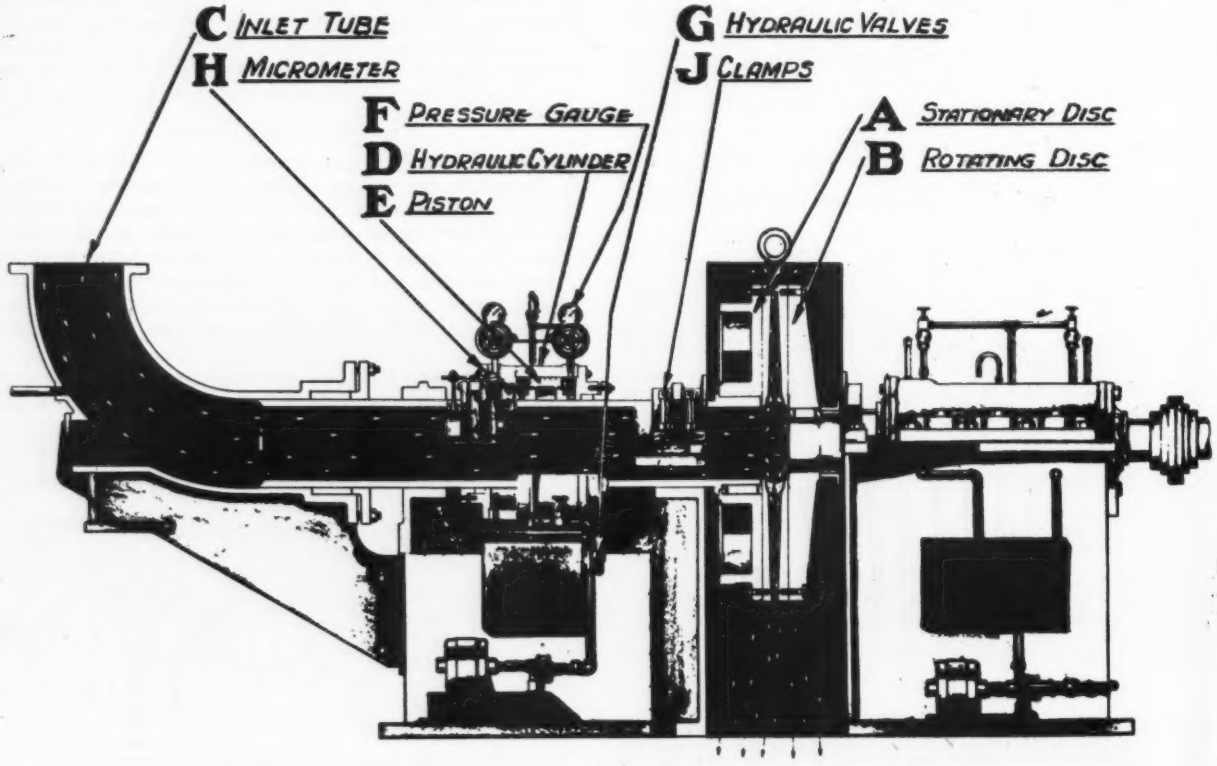


FIG. 8

A. Stationary disc. B. Rotating disc. C. Inlet tube. D. Hydraulic cylinder. E. Piston. F. Pressure gauge. G. Hydraulic valves. H. Micrometer. J. Clamps.

draulic pressure of 100 pounds per square inch on the piston before adjusting the micrometer. Care must be taken to see that the plane surfaces of the discs are thoroughly clean, otherwise the gap measurement would not be accurate. In order to check the gap at the end of a test run, it is advisable to shut down under load, i. e., with pulp suspension passing through the discs. The reading on the micrometer can then be checked by feelers placed between the discs.

The tests reported below were made on discs as shown.

Effect of Gap	Sulphite at 3 per cent Consistency				
Gap in inches	.0015	.005	.010	.020	.030
Freeness drop in cc.	360.	320.	147.	86.	45.
Mullen increase in per cent.	63.4	78.9	112.	52.8	26.4
Tear decrease in per cent.	—24.2	—26.3	—18.3	—10.3	—0.4
Capacity per 24 hours	28.	21.	24.	24.	26.
H.p. per ton	6.2	5.9	4.5	3.6	3.0
Discharge area due to gap in square inches	.2	.66	1.3	2.6	3.9

It appears from these tests that capacity is not materially affected by increasing the gap. On this particular sulphite pulp the maximum mullen development was obtained at 0.010 inch. From the standpoint of maintenance of disc life, it is very desirable to operate with definite gap as there is no metal contact. Furthermore, no discoloration of the pulp suspension occurs.

Effect of Tangential Bars and Grooves

Radial bars are being successfully used on commercial scale for high freeness stuff such as high yield sulphite for newsprint, but since tangential bars of many designs have been used in beaters and jordans it was felt that the refining action of tangential bars in discs should be explored. Discs shown in Fig. 8 were selected for this purpose because the bars are arranged at a different tangent in each ring and by changing the direction of the rotating disc it would be possible to observe the effects of reversing the tangents. Previous tests have shown that there is a marked difference in the capacity of a pair of discs depending upon the tangent used. For instance, Fig. 10 shows a stationary disc with its bars shaded in.

The dotted lines show the bars in a rotating disc. If the direction of rotation is to the left the bars tend to restrict the flow, but if the rotation is to the right the flow of pulp will be facilitated. Commercial tests have shown that as much as 100 per cent increase in capacity can be obtained in some disc designs by rotating to the right instead of to the left, when all other factors are constant.

Fig. 8 shows a stationary disc and it will be noticed that the bars in the inner ring go to the left and the bars in the intermediate and check ring go to the right. When the rotating discs travel to the left the inner ring bars are pushing out and the intermediate and check ring bars are checking back. Rotation to the right reverses these conditions.

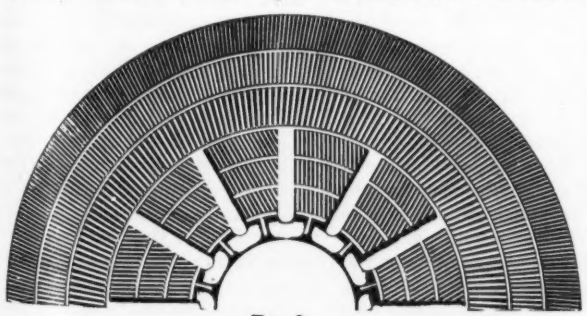


FIG. 9

The mechanics of this disc design are as follows: 1. Outside diameter, 42 inches. 2. Speed, 360 r.p.m. 3. Impact inches, 380,000,000. 4. Contact inches, 8,000,000. 5. Discharge orifice area, 5.61 square inches. 6. Gaps, 0 to .030 inch. 7. Angle of bars: Inner ring, 30 deg. to the left. Intermediate ring, 12 deg. to right and Check ring, 14 deg. to the right.

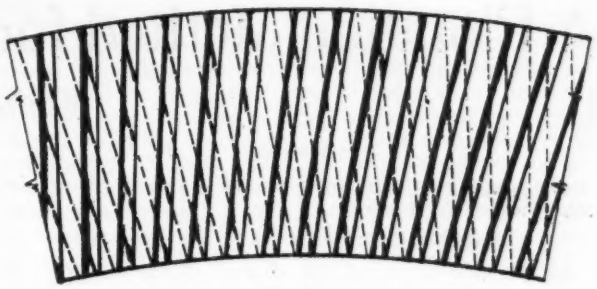


FIG. 10

	Rotation Left		Rotation Right	
Gap	.0015	.010	.0015	.010
Tons per day	16.	20.	28.	24.
H.p. per ton	5.1	3.93	6.2	4.5
Freeness drop, cc.	150.	60.	360.	145.
Per cent rise in mullen	59.5	32.5	63.4	112.0
Per cent loss in tear	—16.5	—6.1	—24.2	—18.3

With this particular disc design (Fig. 9) it appears that rotation to the right is more efficient than rotation to the left. Sigurd Smith states that "in order to maintain smooth running and an efficient cutting action, the cutting angle should not be less than 3 degrees. On the other hand, it must not exceed 43 degrees, as otherwise the flybars will tend to push away the stuff instead of cutting it. It is frequently assumed that the cutting effect increases as the cutting angle becomes longer. No proof could be found for this."[2]

Samuel Milne in his paper (presented beore the Tech. Section P.M.A.) A Study of the Beater, dated February 9, 1927, states: "We are inclined to a small angle, merely enough to insure smooth action and the smaller the better. No increase in cutting or wet beating action can be obtained by angling the bars, and it is quite a mistaken idea to assume that parallel bars do not cut. The reverse is the case."

The opinions of these authorities are cited to emphasize the need for more study in the angle of bars in order to obtain maximum efficiency. Obviously, the range between 3 and 43 degrees is large and a great deal of experimental work will have to be done before a close approximation of the most efficient angle will be known. Tests on discs with radial or parallel bars in comparison with tangential bars indicate very strongly that the latter will develop more strength for less power than the former and current research is being confined to increasingly large angles.

During the past year single disc refiners have been used to refine sulphate pulp in its own liquor at 180 degrees F. at the rate of over 100 tons per day per refiner. Contrary to conservative opinions, no difficulty was experienced with foaming either in the refiners or on the washers. This development involves another series of prolonged tests to determine the best disc design for this purpose. Since data is not available it is necessary to use the same designs as developed for washed sulphate but the incoming pulp properties are quite different consequently a special type of disc will have to be produced in order to obtain maximum efficiency on each pulp. In order to refine raw hot sulphate pulp or "brown stock" as it is commonly known, it is important that the discs be capable of refining large shives which are invariably found in the pulp.

It is too early to report actual date on stuff properties in this paper, but the indications definitely point to lower power consumption than when refining washed pulp to the same freeness. This development will provide opportunity for further study of the effect of refining action at high temperatures and the results will be presented at a later meeting.

[2] The Action of the Beater, p. 204, published by the Technical Section of the Paper Maker's Assoc'n of Great Britain and Ireland, London, 1923.

A Flotation Method for Treating White Water*

By Sven Anspach[1]

Abstract

A description of the Adka saveall and its application to white water clarification.

Development of the White Water Question

In the first years of the paper making industry, no provisions were made for recovering the stock contained in the white water from the paper machine. Then gradually, as the paper makers began to realize the high value of the stock that was being lost daily, a number of savealls were developed and practically all paper machines were equipped with one type or another. All of these were built either on the filtering, screening, or the sedimentation principle.

However, most of the types developed, although yielding very good savings, were not satisfactorily efficient. The need for a complete recovery grew steadily and it was found desirable not only to eliminate all losses from a financial point of view, but also to avoid stream pollution, which was getting to be a serious problem.

Thus the next step in the development was the closed system. By carefully dividing up the white water from different points on the machine and reusing it at various points both within the system of the paper machine proper and at earlier stages of manufacture, it was possible to cut down the losses of stock from the mill to a minimum. In some cases this was done without using any saveall whatever.

This would seem to be the ideal solution of the problem but, upon investigating the matter, one finds a number of serious disadvantages.

In order to be able to work this closed system, it is necessary to have large storage chests for the white water. As a result the quantity of stock that is always in circulation is very large and consequently heavy losses are made at each change of furnish or color. Mills with very frequent color changes do not attempt to employ this system.

All closed systems imply reuse of white water in the beaters. The stock contained in a white water that has passed through the wire is the shortest fibre and so really does not need any further treatment in the beaters. On the contrary, it is rather detrimental to reduce the length of this fibre still further.

In order to achieve a closed system it is generally necessary to return a part of the white water to stages very far back in the mill. The further back one goes, i. e., the longer circulation one makes, the more complicated the system becomes and very often the earlier stages of manufacture are influenced or disturbed by the pulp that is returned with the white water from the paper machine. Another serious disadvantage is also involved here: A high class pulp must often be returned into a make of inferior quality and thus, although most of the losses in material may be eliminated, an economic loss is suffered through the devaluation of high grade stock.

Finally there is the practical difficulty of slime in the storage tanks and pipe lines and the clogging of showers and sprays.

A new line of possibilities has been opened up through the development of the Adka saveall which is built on the flotation principle. This apparatus was invented by the Swedish engineer Adolf Karlstrom and was introduced by him into the European paper industry.

Flotation Principle

The principle of the Adka Saveall is based upon the rapid rising of particles loaded with air at reduced pressure. By mixing air with the water alone, the desired effect is not achieved. The following facts explain this. A comparatively large air bubble will not cling to a particle and bring it up but rushes up alone to the surface. A small bubble will cling to a particle or group of particles and, rising at a lower speed, it will carry the particle with it. When air is mixed with water, part of the air is dissolved in the water and part of it remains mixed as free bubbles. These are chiefly too large to serve in the desired way. If, however, a vacuum is produced above the liquid, minute air bubbles are formed due to the fact that the solubility of a gas in a liquid diminishes with the pressure. Thus it is chiefly the air that was dissolved in the water at atmospheric pressure that causes the flotation when the vacuum is applied. The difference in size between free air bubbles and bubbles created when the vacuum is applied can easily be observed in a test tube of clear water. Having seen such a test one readily understands that when fibers are present in the liquid, these small bubbles will be very well distributed on the particles.

In an average white water there are, however, particles so small that even these minute bubbles cannot cling to them. This explains the necessity of conditioning the solids in the white water which is achieved with the aid of size, alum and sometimes caustic soda, added continuously in small doses.

Method of Operation

The line drawing Fig. 1 shows an Adka with all its details. The apparatus consists of two main parts, the tank A and the box B.

The white water is delivered by the white water pump at the paper machine through the injector, 2, where air at atmospheric pressure is mixed with the water. The air enters the injector through the pipe, 5, which has its intake above the water level in the first compartment, 3, of the box. The chemicals needed for the conditioning of the white water are also added at the suction part of the injector at the points, p, q and r. The doses are regulated with control valves in a control box above the injector. The water coming from the injector enters the first compartment of the box, where most of the free air mixed with the water escapes, causing a violent agitation. Any froth which may form here is sucked back again through the above mentioned air pipe, 5. The water continues through the slanting duct, 6, which has a copper-lined roof. On the way through the duct, the smaller bubbles of free air which did not escape before, have time to collect into larger units, which escape at the upper end of the duct. The rest of the air has time to escape on the open surface of the compartment, 7. Any froth forming here is killed by the sprays around the pipe, 9.

When the water enters this pipe, practically all the free air bubbles are removed; only the air which is dissolved in the water and such bubbles which actually adhere to the fibers are left. In the tank A, made of steel plate, a reduced pressure is maintained, keeping the water level at the height AY. The vacuum in the tank thus corresponds

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* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 22-25, 1937.

[1] The Dorr Company, Inc., New York, N. Y.

with the difference in height between the two water levels, AY and BY. This difference is about 8 feet corresponding with 7 inches of mercury.

As the water rises through the pipe into the tank, the pressure is gradually reduced and air is separated out of solution in the shape of small bubbles which cling to the fibers and lift them to the surface. As the pressure falls lower, all the bubbles expand and they, together with the fibers to which they adhere, are accelerated in their ascent. When the water leaves the pipe, the particles gradually leave the flowing water and rise to the surface AY, where they are carried towards the periphery. The water, thus freed from particles, flows slowly to the bottom where a ring of perforated plates, 24, forms an annular canal, 23, around the bottom edge of the tank. Through the holes in these plates, the water enters this canal from whence it is drawn off at four points through the discharge pipes, 26 and 27, into the main outlet pipe 28. This pipe dips into another compartment, 30, in the box which acts as a water seal for the pipe. The outlet, 31, is supplied with a drop gate which enables one to make accurate measurements of the water quantity overflowing from compartment 30.

The flow of water from the inlet part of the box up through the tank and down to the outlet part is due to the difference in head. As long as water is being fed to the Adka, the level in the inlet parts stands slightly higher than in the outlet part. If the feed is shut off, the level in the inlet part will sink down to that of the outlet part, whereupon the flow through the tank automatically stops.

The pulp on the surface, AY, is drawn off by a suction system consisting of the following parts: The suction nozzle, 12, with a long narrow slot about ¼ inch high on the front side; the suction arm, 13, balanced by the arm, 14, which carries a counter weight; the vertical pipe shaft, 15, rotated by the worm gear, 17, which is driven by the small motor, 18; and, finally, the vacuum pump, 20, delivering the water to the check valve, 22, from which point a pipe returns the stock to the paper machine. When the suction nozzle rotates around the periphery, the pump sucks off the layer of pulp from a zone, the width of which corresponds with the length of the suction nozzle. The nozzle is constructed so that it sucks up the pulp as soon as it comes into contact with it. The pulp is sucked off freely, otherwise the layer would be disturbed. This fact explains why the Adka can treat pulp which, on account of its high percentage of fillers, tends to sink at a slight disturbance. A copper scraper, 10, is attached to the suction arm in such a way that it is raised out of the water and dropped again each time the roll, 11, passes underneath the strip, 39. This scraper pushes the pulp out in the clear space formed behind the suction nozzle. Although the water current alone flowing towards the periphery would carry the stock in the same direction, this movement would be too slow and irregular. With aid of the scraper a constant feed is gained and no variations are left in the consistency of the stock returned to the machine. Furthermore, a rapid change of the stock layer is secured which is important at changes of color.

In addition to the stock, the suction nozzle takes off any air which has entered the tank with the fiber. The

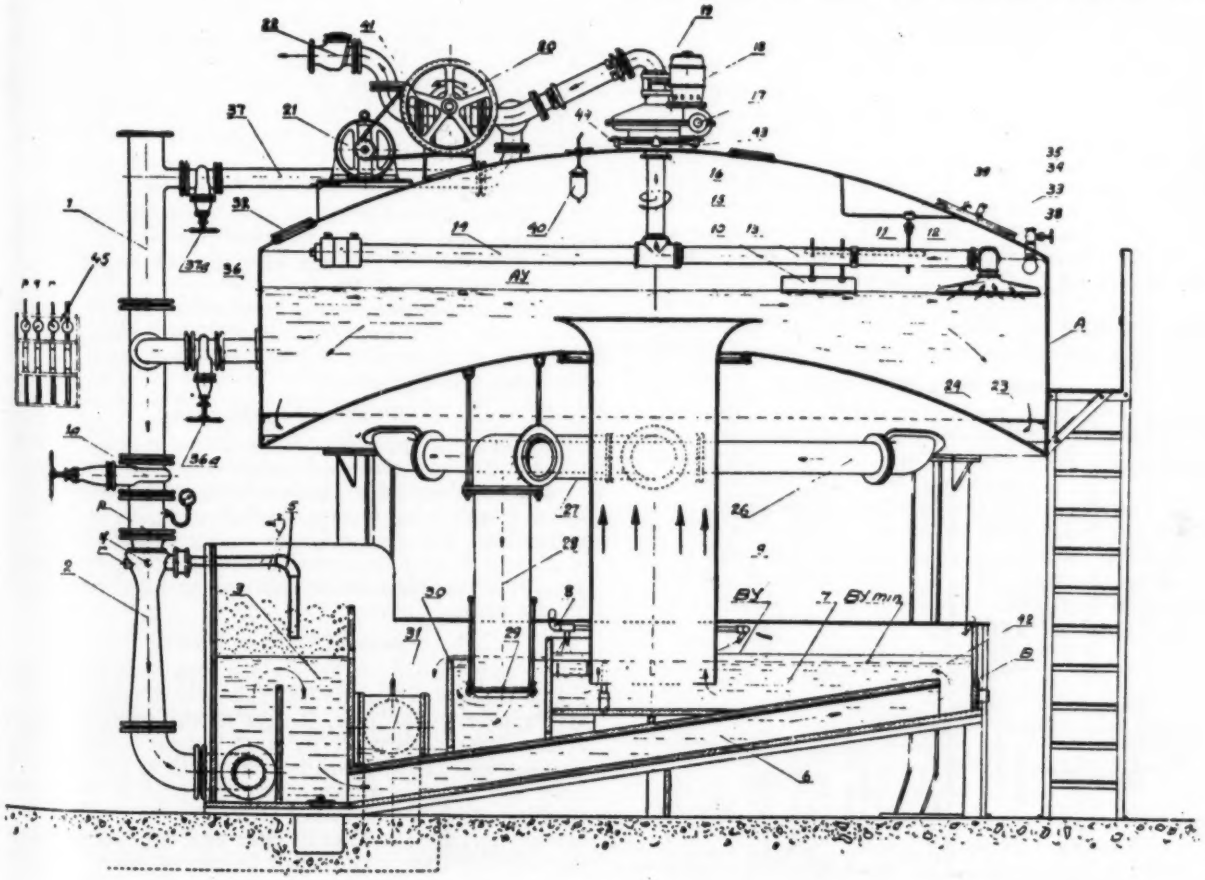

FIG. 1.

DATA FROM ADKA SAVEALL INSTALLATIONS

Name and Type of Mill	Sheet	Furnish	Basis Weight	Filler Per Cent in Sheet	Paper Machine			ADKA Size or Sizes	Flow G.P.M.			Suspended Solids Lbs. per M.G.		Recovery per cent	Miscellaneous
					Width	Speed feet per min.	Output tons per 24 hrs.		Feed	Effluent	Return	Feed	Effluent		
Thilmany Pulp & Paper Co., Kaukauna, Wis., Sulphate Mill	Waxing stock	Sulphite	18	None	115"	370	12.5	No. 45	450	390	60	4.0	.03	99.4	Couch breaks returned to machine chest.
Papierfabrik Biberist, Switzerland	All kinds writing and printing papers	Sulphite with and without ground wood and old paper	30-70	4-30 china clay and blanc fixe	120"	400	16-30	No. 50 No. 50	370	270	100	18.5	.1–.3	97	Couch breaks to Adka (buffered).
Papeterie Schweighausen, France, Greaseproof Mill	Greaseproof and kraft	Bleached and unbleached sulphite kraft	17-35	Max. 6	....	...	8.5-13	No. 50	340	250	90	7	.15	98	Couch break to screen above machine chest.
Papier Industrie A.G. Olsany, Czechoslovakia, Cigarette Paper Mill	Cigarette paper	Rag	7-23	13-20 calcium carbonate	75"	200	6-8	No. 40 No. 45	200	160	40	2.2	.1	95	
Nokia A.B., Finland, Sulphite and Ground Wood Mill	Tissue	Sulphite with 0-60% ground wood	10-13	None	140"	300	5-10	No. 55	400	300	100	6	.1–.25	96	
St. Anne's Board Mill, England	Boxboard	Sulphite liners, ground wood middles	.....	Max. 10 per cent in liner	....	...	....	4 No. 65 2 No. 50	5000 (Prox.)	...	...	4	.25	94	Details of individual units not given.

level automatically remains at the height of the slot in the suction nozzle, standing slightly above the top edge of the slot. Assuming that the level were standing below the slot, then the nozzle would suck air until the water had risen and covered it. After this the water cannot rise any higher. This shows that the vacuum is constant and is determined by the elevation of the suction nozzle.

An electric bulb, 40, lights the inside of the tank, and the flotation and removal of the stock can be observed through three portholes. One of these is placed on top of the tank and the other two at the periphery.

Starting the Adka

Before starting one must make sure that:

1. The shutter, 29, on the discharge pipe is closed.
2. The cleaning holes in the box are closed with their respective plugs.
3. The opening of the suction nozzle is clean.
4. The manhole cover is tight and the valve, 34, on it open.

The valve, 36a, is opened and the tank is filled; at the same time the valve, 1a, is opened a couple of turns so that the box and tank are filled simultaneously. When the tank is filled to the top of the pipe, 9, and the water runs down into the box through the pipe, the valve, 36a, is shut. The valve, 1a, is opened so much that the water in the box flows over the wall, 8. Now the pump, 20, is started. The water for sealing the pump is admitted through pipe, 41, on the pressure side of the pump. Valves, 34 and 35, are closed. The tank is gradually evacuated and the water rises slowly in the pipe. The suction nozzle is placed near one of the portholes. When the water level has risen to the normal level, AY, and the suction nozzle sucks off from the surface, the arm is set in motion. The shutter on the discharge pipe is opened fully and the water in the compartment, 7, sinks to the normal height; the valve, 1a, is fully opened—and the Adka starts to operate. The regulating valves for the conditioning chemicals are opened.

Stopping the Adka

A. If the apparatus has to be stopped for a short time one need only stop the two motors, and close the valve, 1a, in the main pipe and the shutter on the discharge pipe.

B. If the apparatus has to be emptied, one proceeds as above and then opens the valve, 34. After the tank has been emptied, the box can be emptied through the cleaning holes.

Cleaning the Apparatus

A number of spray nozzles working continuously assist to keep the box clean. At week-ends the apparatus is cleaned out thoroughly, the box being flushed with a hose and the tank being flushed through pipe, 37, by opening valve, 37a. The suction pump is stopped and the nozzle is allowed to go once around the tank acting as a spray. Thus it is possible to clean the tank without even taking off the manhole cover.

Change of Color or Furnish

The construction of the box has been designed in relation to the velocity of the water flowing through it. This also applies to the pipe, 9. As to the tank, the water volume certainly is relatively large, but the volume of unclarified water is very small. The particles are separated from the water in a zone above the pipe, 9; the height of this zone is 4 to 7 inches above the pipe. The water beneath this zone is already clear and does not influence the working time. The small volume together with the flow of the water and stock explains the ability of the

apparatus to change stock as quickly as it does. It has been found that the time for the change is between 5 and 10 minutes. Furthermore, there are no dead spots where stock remains in the box, where the flow is comparatively rapid. In the pipe, 9, there is no tendency for the fiber to stick to the vertical wall and in the tank itself the only place where the stock comes in contact with the wall is at the line where the water surface touches the wall of the cylinder and this point is kept clean by a small rubber scraper traveling around the wall behind the suction nozzle.

It may be of interest here to describe the proceedings of a change of make on a paper machine equipped with an Adka. When the paper machine is stopped, the recovered stock from the Adka is switched away from the machine and if one desires to take care of the stock left in the system, it is led to an old screen or else a chest with a bottom of filtering stones and thickened here for storage. The changes from all Adkas in the mill may be collected in the same place. Whether or not the machine is hosed down between the two orders, the Adka is allowed to run continuously and shortly after the new make is run onto the machine, the white water from this make has displaced the contents in the Adka and as soon as the new stock comes through the branch line, it is switched back onto the paper machine.

Examples of Installations

The following table shows some data from Adka installation made on half a dozen different classes of paper. The first example, Thilmany Pulp & Paper Co., is also the first installation in the United States. Before the Adka was installed here, such white water which was not consumed in the beater house was returned to the pulp mill and the stock was recovered together with other stock from the pulp mill on a filter type save-all, thus suffering a definite devaluation. Losses also occurred through water escaping to the sewer from various points underneath the machine.

The Adka now takes care of all the water from the paper machine; couch breaks, however, are returned separately (in this case to the beaters.) The recovered stock is returned to the fan pump together with the tray water. The effluent is practically clear water and analyses have shown as low as .03 pounds per 1,000 gallons, while the feed averages 4 pounds per 1,000 gallons.

The other five examples cover various types of sulphite and sulphate stocks with mechanical pulp, old paper and fillers mixed; in various proportions. Thus the Adka has been successfully adapted to all grades of wood and rag fibers. Strawboard and asbestos fiber have not been treated with success so far, and it remains to be seen whether future development will render this possible.

The adjoining flow sheets show some typical arrangements of paper machines, with Figs. 3, 4 and 5 illustrating the use of the Adka saveall.

Fig. 2 shows a partially closed white water system,

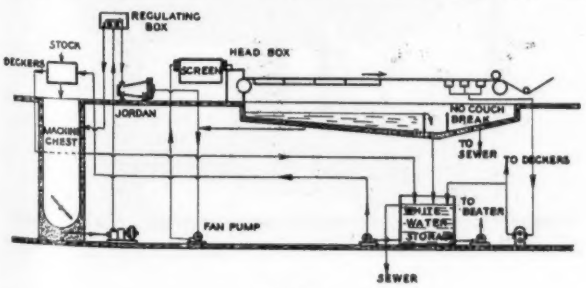

FIG. 2.

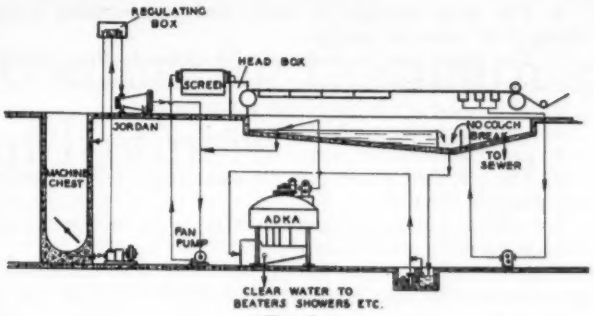

FIG. 3

without a saveall, which has the following disadvantages:

1. Return of short fiber stock to points in system where it is subjected to further shortening in beaters and jordans.
2. Possible loss of stock through overflow of white water storage to sewer.
3. Loss of stock due to necessity of emptying storage tank at color changes.

Fig. 3 shows the same paper machine after an Adka Save-all has been installed. The following advantages over the previous arrangement may be noted:

1. A short white water circuit from the wire pit, through the Adka and thence back into the sheet with minimum amount of stock in circuit.
2. Return of stock to sheet without further refining.
3. Elimination of unknown losses to sewer.

Figs. 4 and 5 show what provisions are made for handling couch breaks. These precautions are made because: A sudden return to the sheet of thick stock from a couch break would cause a variation in the basis weight. Fig. 4 shows how the break is caught in a buffer pit, diluted with water from one wire shower and agitated with the water from the suction pump and gradually overflowed to the rest of the white water in the main pit. This arrangement has been found very practical on machines running at a moderate speed. On high speed machines where a great amount of broke is quickly accumulated, the arrangement according to Fig. 5 has been found preferable. Here the broke is dewatered and returned to the machine chest and the effluent from the screen joins the other white water going to the Adka.

These diagrams show some main principles but naturally many details vary on different installations.

Conclusions—Advantages

The Adka saveall has been used in European paper mills for several years and at present there are about 150 units installed or on order. The following advantages have been found in general practice:

1. High efficiency amounting to 95-99 per cent.
2. The recovered stock can be returned to the mixing box or fan pump without causing variations in weight.
3. The recovered stock is returned to the sheet and so it has the same value as the stock in this stage of processing.

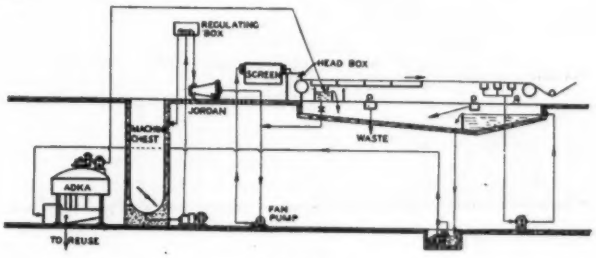

FIG. 4.

4. The small storage of water and pulp enables quick changes of color or quality.

5. The apparatus is automatically cleaned when changing color or furnish without having to be emptied.

6. The Adka needs very little attention.

7. Low operating costs. Max. 3 h. p.

8. Low maintenance costs.

9. The clarified water may be used again at practically any point in the mill.

Reviewing the above points it may be of interest to go into detail on some of them:

Due to the Adka method of treatment it is possible to get an unusually clear effluent. This applies both to waters with and without fillers. Waters without fillers often come out crystal clear whereas waters containing fillers retain on an average 0.25 pounds per 1,000 gallons. On colored papers a saving of colors is noticeable due to the fact that the short fibers which escaped before carried a lot of coloring matter. As to fillers, it has been found that most of the ordinary fillers are recovered with the fibers. China clay, blanc fixe, calcium carbonate, and gypsum have been successfully recovered. Tests have shown that titanium is recovered without difficulty although in Europe no plants have had to deal with this material so far.

The advantage of the direct return of all the recovered stock to the paper machine is that the pulp is returned to the same quality from which it originated and so it is not subject to any devaluation. On the contrary, it is generally found that it gives a better quality of paper, as the short fibers close up the sheet. The circuit being the shortest possible, the recovered stock is returned into the same make, up to the last possible moment, i. e., when the machine chest is emptied.

The attention needed by the Adka is limited to filling the dosing tanks once every day or every second day according to their size and the consumption, and inspecting the Adka a few times per shift.

The power consumption is low, as the motor for the drive requires less than one horse power and the motor for the vacuum pump only about 2 h. p.

As to the cost of the dosing chemicals, it has been found that all of the size and a portion of the alum required by the Adka may be deducted from the beater furnish. Thus practically no extra charge for chemicals is incurred by the use of this saveall.

It will be seen that the Adka has very few moving parts subjected to wear and the only parts which may have to be replaced are the impellers in the vacuum pump in cases where the fillers used have an abrasive character.

Stream Pollution

One of the facts that has strongly contributed to the wide use of the Adka in Europe is that the clarified water has such a low content of solids that it may be discharged without causing any appreciable loss or objectionable stream pollution. On the other hand, it may be re-used as shower or beater water in any mill where this is advisable due to local conditions such as: 1. Shortage of fresh water, 2. Low quality of fresh water, 3. Expensive treatment of supply water and 4. Desire to maintain a higher temperature.

One interesting point is that, when making colors, it is possible to fill a beater, full of a new tint, with clarified water from a previous tint in cases where the original white water used in the beater would have caused a discoloration. This is due to the fact that the small amount of color that may remain in solution causes no difficulty in cases where the color remaining on the fiber would. According to their chemical composition, some colors remain to a certain extent dissolved, while others may be totally precipitated. The former, such as orange, leave a tinted water, whereas when the latter have been used, a practically colorless effluent is received from the Adka.

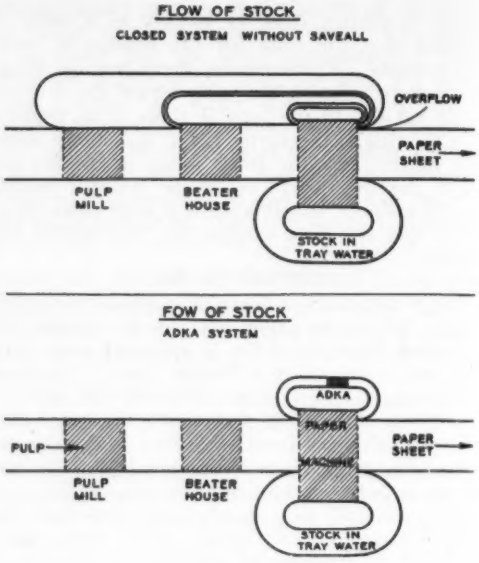

FIG. 6.

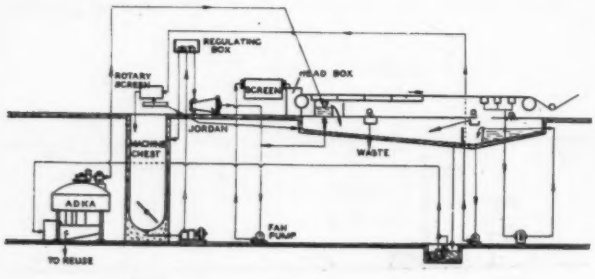

FIG. 5

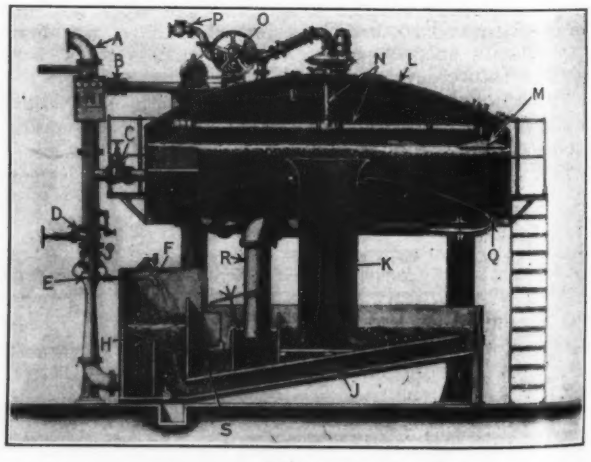

FIG. 7.

Suggested Evaluation Procedure for Comparing Hydrators and Refiners*

By G. N. Collins[1]

In the Technical Association Papers, Series 19, page 162 (1936), G. Lamont Bidwell, Jr., and Mr. D. Manson Sutherland, Jr., submitted a paper entitled "Computation of Impact and Contact Inches in Beaters and Refiners." This paper was a contribution from the Stuff Preparation Committee in which they suggested formulae. These brought forth a paper entitled "Capacity and Efficiency of Beaters and Refiners" by J. B. Gough, in the Pulp and Paper Magazine of Canada in June, 1936. This paper in turn has brought out other authors of formulae some of which have not yet been published. Mr. Gough also refers to Mr. S. Milne's paper "A Study of the Beater," read before the Technical Section of the Paper Makers Association of Great Britain and Ireland, in February, 1927. There is much work being done on the formulae governing the basic principles of hydrators and refiners. This academic work will eventually have to be proven out in actual performance tests on various units.

In reviewing a large number of tests run at various times in different mills, which the writer had available, and in reviewing reports of tests submitted by various machinery manufacturers; it was apparent that some of the essential data was missing.

At the invitation of the Stuff Preparation Committee a meeting was held and the writer was invited to present some ideas which have arisen when making tests on various types of machines in actual practice. The Committee have requested that these thoughts be put before the Technical Association so that they might be used to guide the machinery manufacturers and paper mill staff when running tests.

In designing a new plant or operating an old plant efficiently the question always arises "How to prepare the best stock for the cheapest cost?" The management are at once faced with the problem as to which piece of equipment offered on the market will best answer their purpose and conditions. The list of machines available is truly formidable. A partial list is given. It is emphasized advisedly as a partial list and if any names have been inadvertently omitted it is because of the author's lack of knowledge.

Partial List of Hydrators and Refiners

1. Allen hydrator—Trimbey Machine Works, Glens Falls, N. Y.
2. Bauer refiner—Bauer Brothers Company, Springfield, Ohio.
3. Berkshire refiner—E. D. Jones & Sons Company, Pittsfield, Mass.
4. Biffar refiner—Marburg Brothers, 90 West Street, New York.
5. Bond Miami pulper and refiner—Shartle Brothers Machine Company, Middletown, Ohio.
6. Cannard refiner—D. J. Murray Manufacturing Company, Wausau, Wis.
7. Claflin refiner—Hermann Manufacturing Company, Lancaster, Ohio.
8. Cowles classifiner—Dilts Machine Works, Fulton, N. Y.
9. Dilts hydrafiner—Dilts Machine Works, Fulton, N. Y.
10. Emerson beater—Emerson Manufacturing Company, Lawrence, Mass.
11. Fritz hydrator—Love Brothers, Aurora, Ill.
12. Green impact beater—Arthur B. Green, Needham, Mass.
13. Haug refiner—Anton J. Haug, Nashua, N. H.
14. Hollander beater—see Lockwood's Trade Directory.
15. Horne beater—J. H. Horne & Sons Company, Lawrence, Mass.
16. Howard refiner—Manitowoc Engineering Works, Manitowoc, Wis.
17. Jones multibeater—E. D. Jones & Sons Company, Pittsfield, Mass.
18. Jones-Bertrams beater—E. D. Jones & Sons Company, Pittsfield, Mass.
19. Jones pulper—E. D. Jones & Sons Company, Pittsfield, Mass.
20. Jordan—see Lockwood's Trade Directory.
21. Kollergang—Pusey & Jones Corporation, Wilmington, Del.
22. Lannoye pulper—Rice, Barton & Fales Inc., Worcester, Mass.
23. Marshall refiner—
24. Marx beater—
25. Miller duplex beater—Downingtown Manufacturing Company, Downingtown, Pa.
26. Mills engine—Mills Machine Company, Lawrence, Mass.
27. Morden stock maker—Morden Machine Company, Oregonian Building, Portland, Ore.
28. Niagara beater—Valley Iron Works, Appleton, Wis.
29. Noble & Wood refiner—Noble & Wood Machine Company, Hoosick Falls, N. Y.
30. Paragon beater—Masson Scott & Co., Ltd., London, Eng.
31. Pope refiner or brushing engine—J. H. Horne & Sons, Lawrence, Mass.
32. Rabus beater—
33. Rod Mill—see Lockwood's Directory.
34. Seaborn vortex beater—Appleton Machine Company, Appleton, Wis., Valley Iron Works, Appleton, Wis., Downingtown Manufacturing Company, Downingtown, Pa., E. D. Jones & Sons Company Pittsfield, Mass.
35. Sprout Waldron refiner—Sprout Waldron Company, Muncy, Pa.
36. Sutherland refiner—D. M. Sutherland, Jr., Broad Street Bank Building, Trenton, N. J.
37. Umpherston beater—Holyoke Machine Company, Holyoke, Mass.
38. Stobie beater—
39. Sturtevant refiner—Sturtevant Mill Company, Harrison Square, Boston, Mass.
40. Target hydraulic refiner—Paper and Industrial Appliances Inc., 122 E. 42nd street, New York.
41. Taylor beater—Masson Scott & Co., Ltd., London, Eng.
42. Thorsen Hery beater—Paper & Industrial Appliances Inc., New York.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 22-25, 1937.

[1] Member TAPPI, Scarsdale, N. Y.

43. Voith refiner—Valley Iron Works, Appleton, Wis.
44. Weiner refiner—The Dorr Co., New York, N. Y.
45. Smith-Egan Beater—Mid-West-Fulton Company, Dayton, Ohio and D. J. Murray Mfg. Company, Wausau, Wis.

In attempting to arrive at a decision in selecting a machine it always brings up the idea of comparing one machine with another. The basis of most comparisons is a beater or a jordan. In reviewing a large number of tests it is usually true that the data on the initial quality of the stock and final quality of the stock have been overlooked. A questionnaire is submitted and if answered in full, would permit a direct comparison of one machine with another. It might be possible then, to set up an empirical formula giving a numerical value to each different unit. The following questionnaire is offered as a guide in making future tests.

Data Required for Comparison

A. Specification Data of Manufacturers

1. Name of hydrator or refiner.
2. Name and address of manufacturer.
3. Date of installation.
4. Price of equipment f. o. b. manufacturer's plant.
5. Cost of completed installation.
6. Shipping weight of unit.
7. Floor area and head room required.
8. Materials of construction; bronze, cast iron, etc.
9. Rated speed and power consumption.
10. Allowable pressure on housing or casing.
11. Rated capacity in pounds per hour.
12. Size of motor and rating if part of unit.
13. Size of intake and discharge openings.
14. Record of number of bars or refining surfaces in bed plate and rotor width, spacing, length, etc. (Note special design or arrangement.)
15. What method is used to regulate clearance between bed plate and rotor?
16. Show sketch, photograph or blueprint of unit.

B. Mill Data on Installed Unit

17. Location of unit with stock flow diagram.
18. Has unit been in continuous operation, if so, how long?
19. What is the method of consistency regulation of stock ahead of units?
20. What control devices are used and what auxiliary equipment is required?
21. Head or pressure of stock entering and leaving unit.
22. Pressure of stock within unit.
23. What power is consumed in delivery of stock to unit?
24. Is the adjustment of clearance between the refining surfaces easily manipulated and readily reproduced? Is control manual or automatic?
25. Is there any tendency for the unit to plug either during operation or on a start-up?
26. What is the most effective consistency and what is the range over which the unit will operate satisfactorily?
27. What is the maximum capacity that can be handled by the unit and the corresponding freeness drop and power consumption?
28. Is the unit easily cleaned and is it suitable for running colored stock?
29. Is there any evidence of serious pitting, excessive wear, etc.
30. How often must the refining surfaces be replaced? Based on mill data where available.
31. Can worn or damaged parts be replaced quickly and easily?
32. How much labor is required to operate the unit?
33. How many units can one operator handle and is there any special instruction required?
34. What is your usual method of operation of a refining unit?
    (a) hold to constant load applied
    (b) hold to constant capacity
    (c) vary operations according to demand

C. Test Data Required on Each Test

35. Type of pulp handled (such as unbleached sulphite, bleached sulphite, etc.).
36. Initial characteristics of pulp:
    (a) freeness
    (b) strength, mullen, tear, fold, tensile
    (c) Roe chlorine number or permanganate number
    (d) copper number
    (e) classification (screen) of stock
    (f) opacity
    (g) color
37. Repeat the above tests—item 36 on the refined stock after processing.
38. Does stock contain any white water? If so, what is the pH of the white water; percentage of solids and percentage of filler in white paper?
39. Is the formation of the sheet visibly affected by the treatment (hydration) due to the unit?
40. Is the opacity of the sheet affected?
41. Do you experience any trouble with discoloration of stock, fish-eyes, etc. with this equipment?
42. Brightness of sheet before and after stock has passed through unit.
43. What is the length of test?
44. What is the actual speed of the unit? Weight of rotor?
45. Has stock received any processing previous to going to the machine refiner?
46. Capacity handled per hour, pounds, oven-dry.
47. Consistency of supply, per cent oven-dry, average with maximum and minimum readings.
48. Horsepower consumption, horsepower per day, per ton.
49. Horsepower consumed idling.
50. Clearance between refining surfaces—absolute measurements where possible.
51. Number of contact inches and impact inches per minute
52. Temperature of stock entering and leaving the unit.
53. The pH value of stock before and after hydration in the unit.
54. Capacity at 100 points drop in freeness—give limits.
55. Horsepower per ton per day for 100 points freeness drop—give limits of freeness readings.
56. Maintenance cost per unit per year.
57. Cost per ton of stock processed:

labor ..... power ..... steam .....
repairs .... interest ..... depreciation .....
total .....

All the physical and chemical tests should be made according to a standard method.

It is apparent that the cost of making the test runs will involve considerable expense if it is done by individual mills or companies. This cost could be reduced by cooperative tests and "pooling" of test data. Some individuals may feel that they have spent considerable sums for information which they alone should retain.

Acknowledgment

The author wishes to acknowledge the suggestions made with respect to the questionnaire, by R. I. Wynne-Roberts of the Norton Company.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Paper Specialties

High Grade Boards. Papier-Ztg. 61, No. 68:1282-1283 (Aug. 22, 1936).—Ivory board is a highly finished two-sided board, prepared from rags and better grades of chemical wood pulps by pasting two webs together. It is used for high class art printing. Special kinds are sold under the names of alabaster, opal, porcelain, etc. Bristol boards consist of two high-class outside layers with a cheap filler; they are chiefly used for the manufacture of posters, labels, display signs, etc. Trade customs do not always clearly differentiate between these names.—C.J.W.

Method and Apparatus for Manufacturing Paper. Ross C. Hurrey, assignor to International Paper Co. U. S. pat. 2,054,630 (Sept. 15, 1936).—Improved sheet formation is obtained by directing high-velocity sprays partly against the slice and partly against the pulp stream emerging from under the slice.—A.P.-C.

Process and Apparatus for Making Paper. John Buss, assignor to Provincial Paper, Ltd. U. S. pat. 2,054,214 (Sept. 15, 1936).—In order to produce paper having as nearly as possible the same strength in the cross as in the machine direction, means are provided for at least preventing transverse shrinking of the sheet on the machine, and preferably for stretching it transversely. This is effected by providing, at suitable points in the drier section, rolls formed of a non-rotatable supporting bar that is slightly curved from end to end and is covered with a tubular roller of rubber hose or other flexible material.—A.P.-C.

Process and Apparatus for Surfacing Sheet Material with Pigments, Varnishs, Waterproofing Solutions, etc. Wilfrid B. Pirie, Cyril A. Chester and William Melville, assignors to Raymakers Syndicate, Ltd. U. S. pat. 2,053,494 (Sept. 8, 1936).—In the decoration of paper by a flotation process consisting in depositing the pigment or other coating composition in the form of a liquid film on the surface of a liquid flotation medium and transferring the film as a coating on to the paper, a regulated electric and (or) magnetic field is applied at selected locations to the flotation medium and (or) to the film floating thereon and (or) to a transfer surface. The purpose of such application is to control the spreading and orientation of the film or film-forming materials and the formation of patterns.—A.P.-C.

Apparatus for Treating Shingles and Shingle Elements. Lester Kirschbraum, assignor to The Patent and Licensing Corp. U. S. pat. 2,053,723 (Sept. 8, 1936).—Shingle elements are arranged in a stack. The topmost element is withdrawn successively and at the same time the butt portion and cut edges are coated with asphalt, etc. As each element is removed from the stack, the next element is exposed to and (or) brought in contact with the coating mechanism. As each shingle element is removed and coated, it is delivered on a conveyor in overlapping relation with other shingles so as to expose only the coated portion of the shingle, and grit is applied to and pressed into the coating.—A.P.-C.

Wrapping Material for an Edible Product. John Helfrich, assignor to Newark Paraffine and Parchment Paper Co. U. S. pat. 2,051,170 (Aug. 18, 1936).—One side of waxed paper is coated with a suitable amine, preferably mono- or tri-ethanolamine.—A.P.-C.

Assembled Board. Ernst Rudin and Heinrich Kollbrumner. U. S. pat. 2,054,967 (Sept| 22, 1936).—The board is built up of a number of corrugated sheets which are glued together by means of spots or spaced lines or lanes of adhesive placed diagonally in straight, zig-zag, wavy or broken lines. The sheets are placed so that the corrugations of adjacent sheets are transverse to each other and the lines of glue are preferably diagonal to both sets of corrugations.—A.P.-C.

Method of Making Ply Board. Jordan V. Bauer, assignor to Stein, Hall Manufacturing Co. U. S. pat. 2,051,025 (Aug. 18, 1936).—In the manufacture of double-faced corrugated board, an adhesive is used consisting of ungelatinized starch suspended in a suitable viscous medium such as starch paste, vegetable gums, gluten, gelatin, etc.—A.P.-C.

Manufacture of Stencil Sheets. Bruno Hagg, assignor to Greif-Werke vorm. Deutsche Burobedarfs-Gesellschaft Bruer & Co. U. S. pat. 2,052,291 (Aug. 25, 1936).—A coating composition suitable for coating stencil sheets comprises gelatin admixed with Turkey red oil, oleic alcohol, chlorinated napthalene and the mono-oleate of glycerin, all of the materials being uniformly dispersed in aqueous alcohol.—A.P.-C.

Prepared Roofing. Walter H. Cady, assignor to The Patent and Licensing Corp. U. S. pat. 2,048,597 (July 21, 1936).—Strip shingle blanks cut from a sheet or web of roofing felt (which may or may not have been saturated, coated and surfaced) are coated over all their surfaces and edges with a molten bituminous substance as they are fed between a pair of rolls. They are delivered to a horizontal endless belt above which is mounted a hopper which feeds granular surfacing material on to the strips. The belt carries the surfaced strips between rolls which press the surfacing into the coating.—A.P.-C.

Method of Drying and Impregating Felt. Harold D. Brown. U. S. pat 2,050,483 (Aug. 11, 1936).—The essential feature of the invention consists in submerging the felt in a hot asphalt bath for a very short time, so that both surfaces of the felt are coated with asphalt but the vaporized moisture is released from the felt only after the latter has left the asphalt bath, thereby avoiding formation of foam in the bath. The felt is preferably pressed after leaving the bath, and the submergence and pressing operations may be effected repeatedly if required.—A.P.-C.

Web and Bituminized Article Made Therefrom and Process of Making the Same. Harold W. Greider and George A. Fasold, assignors to The Philip Carey Manufacturing Co. U. S. pat. 2,051,168 (Aug. 18, 1936).—A roofing or flooring felt is made from a furnish of unbeaten alpha fiber (or similar grade of pulp) and beaten wood pulp (preferably kraft).—A.P.-C.

Corrugator. Karl Sieg, assignor to Samuel M. Langston Co. U. S. pat. 2,051,319 (Aug. 18, 1936).—The invention provides various mechanical features in machines

for manufacturing single-faced corrugated paper. It provides more particularly for applying the adhesive to the facing sheet instead of applying it to the crowns of the corrugations, for holding the corrugated sheet in close contact with the corrugating roll until the facing sheet has been applied, and for preventing application of adhesive to the facing sheet when a break or tear occurs in the corrugated sheet.—A.P.-C

Artificial Leather. Milton O. Schur, assignor to Brown Co. U. S. pat. 2,055,635 (Sept. 29, 1936).—A base sheet of rubber-impregnated water-leaf paper is coated with a "skin-forming" composition which suitably consists of a suspension of powdered cellulose in latex together with vulcanizing agents and accelerators.—A.P.-C.

Resin Impregnated Cellulose Material. Peter Pinten, assignor to Dynamit-Aktiengesellschaft vormals Alfred Nobel and Co. U. S. pat. 2,054,444 (Sept. 15, 1936).—Paper is impregnated with a phenol-aldehyde condensation product which has a solubility for water of at least 18 per cent at 25° C., and is then hardened by the application of heat and pressure.—A.P.-C.

Core for Paper Rolls. Frederick W. Roberts and George D. Illig, assignors to Niagara County National Bank and Trust Co. U. S. pat. 2,052,541 (Aug. 25, 1936).—The core consists of a single-walled pipe-like unitary body of thin metal, provided at each end with a reinforcing ring of greater axial length than radial thickness and having a diameter not greater than the outside diameter of the core. Grooves (preferably helical) are formed over a portion of the length of the core.—A.P.-C.

Machinery

Developments in Paper Machine Construction. Papier-Fabr. 34, no. 26:245-253 (June 28, 1936).—A review is given of recent important developments in the construction of the wet part and the dryer section of Fourdrinier machines, cylinder machines and winders.—C.J.W.

Pretreatment of Wood for Barking in Drums. W. Schmid. Papier-Fabr. 34, no. 26:226-229 (June 28, 1936).—Different installations in the Scandinavian countries for pretreating wood with warm water and steam mixtures prior to barking in drums are described.—C.J.W.

Log Barker. Albert Hokonson. U. S. pat. 2,055,108 (Sept. 22, 1936).—The log, while being simultaneously propelled forward and rotated, is subjected to the action of a rotating wire brush in the form of two truncated cones with their smaller ends juxtaposed and consructed to permit of quick and easy replacement of any of the brush elements.—A.P.-C.

Miscellaneous

Summer Meeting of the German Technical Asociation for Pulp and Paper in Darmstadt, June 26 to 28, 1936. Wochbl, Papierfabr. 67, No. 27: 501-504 (July 4, 1936).—Brief description of the papers to be given and the speeches made by various officials in the organization.—J.F.O.

Annual Meeting 1935 of the German Technical Pulp and Paper Association, from December 5-7, 1935, in Berlin. Papier-Fabr. 33, No. 50: 433-40; No. 51: 441-45, (Dec. 15, 22, 1935).—A brief synopsis of the entire proceedings is given, including the business part of the meeting and abstracts of the papers presented.—J.F.O.

Paint Job in a Paper Mill. Which Paints Are Most Advantageous? Fr. Kirchmann. Wochbl. Papierfabr. 67, No. 23: 430-32 (June 6, 1936).—Discussion of the effect of different colors of paint on the workman and his output, and the paints to use for the different departments of a paper mill.—J.F.O.

Glassy Specks in Paper. Wochbl. Papierfabr. 67, No. 28: 520 (July 11, 1936).—Discussion of a mill which was troubled with specks in the paper which were finally traced to the mill water used in the manufacture.—J.F.O.

Preventing Slime Growth in Paper Making Processes. Pierre Drewsen, assignor to The Hinde and Dauch Paper Co. U. S. pat. 2,046,614 (July 7, 1936).—Caustic soda or caustic potash is added to paper mill water at any suitable point in amount equal to at least 1 lb. per 10,000 lbs. of water in excess of that required to neutralize the natural hardness of the water.—A.P.-C.

What Constitutes Validity of a Patent. Charles W. Rivise. Paper Trade J. 103, No. 7: 72-77 (Aug. 13, 1936).—An explanation of the significance and protective value of a patent (according to U. S. law) with abstracts of pulp and paper patents litigated within the last 10 yrs.—A.P.-C.

The Economy of High Intensity Mercuray Lighting. Walter W. Wildeman. Paper Industry 18: 383-384 (Aug., 1936).—A general discussion.—A.P.-C.

Applications of Chromium in the Paper Industry. Maurice Déribéré. Papeterie 5: 445-451 (May 25, 1936).—A brief outline of the properties and uses of chromium products and compounds used in the paper industry.—A.P.-C.

Chilled Iron: Its Applications. Papier 39: 343-352 (April, 1936).—An outline of the manufacture, application and determination of the hardness of chilled iron.—A.P.-C.

Some Danger Spots to Paper Makers. G. J. Adams. Paper Industry 18: 185-189 (June, 1936).—Various danger spots in paper mills are pointed out, giving examples of accidents which occurred and indicating means of preventing them.—A.P.-C.

Waste Utilization and the Reduction of Stream Pollution. L. F. Warrick and J. M. Holderby. Paper Trade J. 103, No. 1: 103-107 (July 2, 1936).—A review and discussion of the work carried out since 1925 by the Wisconsin Board of Health, in co-operation with Wisconsin pulp and paper mills with a view to reduce or eliminate stream pollution by pulp and paper mills in that state.—A.P.-C.

United States Patents on Paper Making. Second Quarter, 1936. Clarence J. West. Paper Trade J. 103, No. 2: 26-28 (July 9, 1936).—A list in numerical sequence of patents relating to pulp and paper making issued at Washington during April, May and June, 1936.—A.P.-C.

Artificial (Molette) Water-Marks. Stefan Wallner. Finnish Paper and Timber J. 18, No. 13: 670-672 (July 15, 1936) (In German).—Artificial water-marks first came into use at the beginning of this century. Genuine water-marks are pressed into the moist paper web before it reaches the wet presses, while artificial water-marks are formed in the finished paper by means of engraving and embossing rolls, etc. The so-called "Molette" water-marks are applied on the third wet press of the paper machine, the effect being produced on the moist and only partly formed sheet. They are made by devices fitted to rubber rings, and by altering the pressure, the depth of the impression can be changed as desired. Artificial water-marks have the advantage of being cheaper; they are not influenced by weight and furnish of the paper, and extension and shrinkage of the web need not be taken into consideration.—C.J.W.

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WEEK ENDING FEBRUARY 27, 1937

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J. Eisenberg, *Seatrain New Orleans,* Havana, 722 bls. rags; ———, *Executive,* Alexandria, 139 bls. bagging, 60 bls. rags; Irving Trust Co., *Executive,* Alexandria, 64 bls. bagging; R. Blank, *Executive,* Alexandria, 66 bls. rags; Castle & Overton, Inc., *Executive,* Alexandria, 64 bls. rags; E. J. Keller Co. Inc., *Executive,* ———, 140 bls. rags, 100 bls. bagging; Irving Trust Co., *Black Heron,* Rotterdam, 171 bls. bagging; ———, *Black Heron,* Rotterdam, 122 bls. rags; E. J. Keller Co. Inc., *Examelia,* ———, 168 bls. rags; ———, *Examelia,* Genoa, 300 bls. rags; R. J. Ross & Co. Inc., *Examelia,* Alexandria, 275 bls. rags, 28 bls. hessians; Irving Trust Co., *Examelia,* Alexandria, 60 bls. bagging; ———, *Examelia,* Alexandria, 162 bls. rags; W. Stone & Co., *Examelia,* Alexandria, 152 bls. rags; R. Blank, *Examelia,* Naples, 260 bls. rags; R. Blank, *Maasdam,* Rotterdam, 58 bls. bagging, 184 bls. rags; J. Eisenberg, *Maasdam,* Rotterdam, 6 bls. rags; O'Brien Padawer Co., *Maasdam,* Rotterdam, 104 bls. cotton waste; D. Benedetto, Inc., *Estrella,* Marseilles, 82 bls. new cuttings; Continental Bank Trust Co., *Estrella,* Marseilles, 165 bls. bagging; E. J. Keller Co. Inc., *Estrella,* ———, 303 bls. dark cottons; New England Waste Co., *Kongo Maru,* Kobe, 100 bls. cotton waste; Loumar Textile By Products, *Volendam,* Rotterdam, 32 bls. bagging; R. Blank, *Volendam,* Rotterdam, 86 bls. rags; J. Cohen & Son Co. Inc., *Scythia,* Liverpool, 16 bls. rags, 17 bls. new cuttings; Glaser Jaffe Woolstock Co. Inc., *Scythia,* Liverpool, 57 bls. rag cuttings; ———, *Scythia,* Liverpool, 88 bls. rags; E. J. Keller Co. Inc., *Sonnavind,* ———, 100 bls. picker waste, 100 bls. rags; Royal Manufacturing Co., *Sonnavind,* Shanghai, 200 bls. cotton waste; O. Smith & Son, *Sonnavind,* Shanghai, 50 bls. cotton waste; Williamson Products Co., *Sonnavind,* Shanghai, 200 bls. cotton waste; Railway Supply & Manufacturing Co., *Sonnavind,* Shanghai, 400 bls. cotton waste; J. J. Ryan & Son, Inc., *Sonnavind,* Shanghai, 150 bls. cot-

ton waste; New England Waste Co., *Sonnavind,* Shanghai, 487 bls. cotton waste; Railway Supply & Manufacturing Co., *Sonnavind,* Kobe, 100 bls. cotton waste; ———, *Sonnavind,* Kobe, 300 bls. cotton waste; ———, *Hokuroku Maru,* Shanghai, 100 bls. cotton waste; First National Bank of Boston, *Hokuroku Maru,* Shanghai, 100 bls. cotton waste; J. Finkelstein, *Black Gull,* Antwerp, 112 bls. rags; Harris Goldman & Co., *Black Gull,* Antwerp, 232 bls. rags; Royal Manufacturing Co., *Black Gull,* Antwerp, 25 bls. cotton waste; D. Galloway, *Black Gull,* Antwerp, 26 bls. cotton waste; J. Eisenberg, *Black Gull,* Antwerp, 14 bls. rags; ———, *Hamburg,* Hamburg, 100 bls. rags; ———, *Hamburg,* Hamburg, 256 bls. cotton waste; E. J. Keller Co. Inc., *Hoegh Transporter,* ———, 49 bls. bagging; E. J. Keller Co. Inc., *Taian Maru,* ———, 200 bls. cotton waste; E. J. Keller Co. Inc., *Ida,* ———, 65 bls. bagging, 141 bls. paper stock; E. J. Keller Co. Inc., *Gerolstein,* ———, 118 bls. bagging, 196 bls. paper stock.

OLD ROPE

D. Benedetto Inc., *Estrella,* Marseilles, 106 coils; W. Steck & Co., *Volendam,* Rotterdam, 43 coils; Banco Coml. Italiane Trust Co., *Volendam,* Rotterdam, 46 coils.

CASEIN

National City Bank, *Augvald,* Hamburg, 125 bags; American Cyanamid & Chemical Co. Inc., *Atlantida,* Santiago de Cuba, 64 bags; ———, *Western World,* Buenos Ayres, 1,334 bags; ———, *Hamburg,* Hamburg, 134 bags.

CHINA CLAY

———, *Bristol City,* Bristol, 50 casks.

WOOD PULP

Castle & Overton, Inc., *Augvald,* Hamburg, 500 bls. wood pulp, 100 tons; Guaranty Trust Co., *Augvald,* Hamburg, 600 bls. wood pulp, 92 tons; Perkins Goodwin & Co., *Dominion Shipper,* St. George, N. S., 8,427 bls. ground wood pulp; Perkins Goodwin & Co., *Topdalsfjord,* Drammen, 1,125 bls. sulphite; ———, *Topdalsfjord,* Oslo, 1,316 bls. mechanical pulp; J. Andersen & Co., *Topdalsfjord,* Greaker, 2,500 bls. sulphite; E. M. Sergeant Pulp & Chemical Co., *Bergensfjord,* Oslo, 1,200 bls. chemical pulp; The Borregaard Co. Inc., *Bergensfjord,* Oslo, 1,232 bls. sulphate; Perkins Goodwin & Co., *Bergensfjord,* Drammen, 250 bls. sulphite; Central Hanover Bank Trust Co., *Hamburg,* Hamburg, 1,600 bls. wood pulp, 246 tons; Irving Trust Co., *Hamburg,* Hamburg, 450 bls. mechanical pulp, 76 tons; E. J. Keller Co. Inc., *Hoegh Transporter,* ———, 320 bls. wood pulp.

WOOD PULP SHEETS

———, *Bremen,* Bremen, 103 bls.; ———, *Maasdam, Rotterdam,* 17 bls.

PORTLAND IMPORTS

WEEK ENDING FEBRUARY 27, 1937

Gottesman & Co. Inc., *Rondo,* Sweden, 3,500 bls. wood pulp; Gottesman & Co. Inc., *Kersten Miles,* Sweden, 6,900 bls. wood pulp; Price & Pierce, Ltd., *Wisa,* ———, 750 bls. unbleached sulphite.

BOSTON IMPORTS

WEEK ENDING FEBRUARY 27, 1937

American Express Co., *Maasdam,* Rotterdam, 82 bls. rags; Gottesman & Co. Inc., *Rondo,* Sweden, 1,070 bls. wood pulp; Gottesman & Co. Inc., *Braheholm,* Sweden, 2,130 bls. wood pulp; Price & Pierce, Ltd., *Wisa,* ———, 1,950 bls. unbleached sulphite; Parsons & Whittemore, Inc., *Hagen,* ——— 1,250 bls. wood pulp; Parsons & Whittemore, Inc., *Goslar,* ———, 560 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 27, 1937

———, *Hamelin,* Buenos Ayres, 250 bags casein; E. J. Keller Co. Inc., *Black Heron,* ———, 233 bls. rags; D. Benedetto Inc., *Black Heron,* Antwerp, 235 bls. rags; D. Galloway, Inc., *Black Heron,* Antwerp, 57 bls. cotton waste, 71 bls. jute waste; ———, *Black Heron,* Antwerp, 263 bls. rags; American Express Co., *Black Heron,* Antwerp, 97 bls. cotton waste; ———, *Estrella,* Marseilles, 61 bls. old cottons; ———, *Sonnavind,* Kobe, 150 bls. rags; E. J. Keller Co. Inc., *Sonnavind,* ———, 334 bls. rags; Gottesman & Co. Inc., *Scanstates,* Sweden, 3,000 bls. wood pulp; Parsons & Whittemore, Inc., *Iristo,* ———, 3,551 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING FEBRUARY 27, 1937

Castle & Overton, Inc., *Black Heron,* Rotterdam, 325 bls. wood pulp, 65 tons; S. Shapiro & Son, *Black Heron,* Antwerp, 63 bls. bagging; Congoleum Nairn Co., *Examelia,* Marseilles, 582 bls. rags; Castle & Overton, Inc., *Maasdam,* Rotterdam, 591 bls. wood pulp; M. M. Morris, *Maasdam,* Rotterdam, 100 pkgs. wood pulp boards; Parsons & Whittemore, Inc., *City of Norfolk,* ———, 200 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING FEBRUARY 27, 1937

Darmstadt Scott & Courtney, *Black Heron,* Antwerp, 71 bls. flax waste.

NEWPORT NEWS IMPORTS

WEEK ENDING FEBRUARY 27, 1937

Parsons & Whittemore, Inc., *City of Newport News,* ———, 650 bls. wood pulp.

Miss Louise T. Stevenson Dead

Louise T. Stevenson, aged 27, daughter of Louis T. Stevenson, 60 East 42d street, New York, passed away on January 4. Miss Stevenson was associated with her father in his paper business.

She was reared in Pittsfield, Mass., where she attended Miss Mills' and Miss Hall's schools. She prepared for college at The Principia, and also attended the Principia Junior College. There she was elected to the Theta Alpha Eta honor society.

In 1931 she received her Bachelor of Arts degree from Salem College, Winston-Salem, N. C. She was actively interested in dramatics, and was class poet, class secretary and a member of Alpha Chi Alpha, the National Honorary Journalistic Society.

After her graduation, she worked for the Grafton Press a short time, and became associated with her father in February, 1932.

She is survived by her father, her mother, Emily B. Stevenson, and her brother, M. Bradley Stevenson.

Maclaren Power & Paper Co.'s Report

For the year ending December 31 last, net operating returns of $1,245,248 are reported by the Maclaren Power and Paper Company as compared with $1,240,899 in the preceding year. This was substantially in excess of the $990,000 required to meet interest requirements on the $18,000,000 in 1st mortgage 5½'s outstanding, but after setting aside heavier depreciation at $453,728 and taking into account an amount of $152,449 charged to capital construction account, there was a net deficiency, after payment of bank and bond interest, of $162,936 on the year, which compared with a net profit of $3,367 in 1935, when depreciation was set aside at $253,172.

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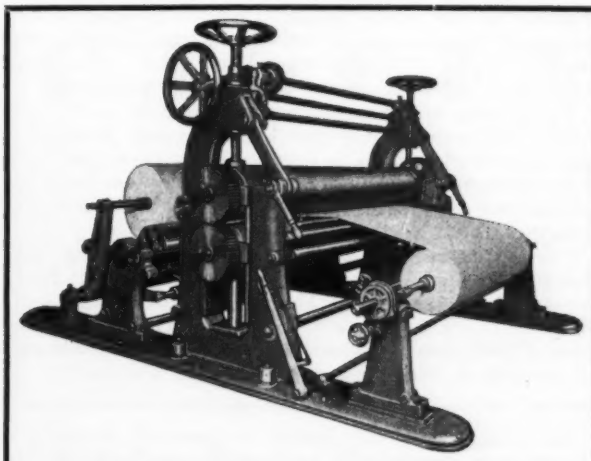

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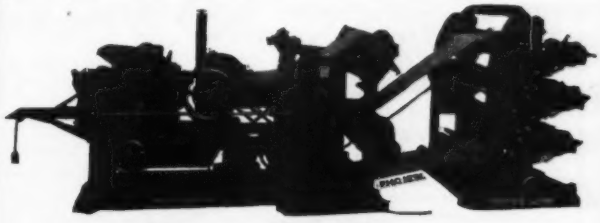

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, March 3, 1937.

Conditions in the local paper market are improving. Demand for the various standard grades of paper is well sustained. Sales forces of the leading organizations continue optimistic regarding the future trend. Prices are steady to firm and reports of shading are infrequent.

The position of the newsprint paper market is stronger. Production in the United States, Canada and Newfoundland is proceeding at near capacity in order to take care of the increased consumption. There are no excessive accumulations of stock at the mills. Prices are maintained at formerly quoted levels.

Trading in the fine paper market is holding up well. Demand for book, cover, bond and ledger papers is fairly heavy. Prices are firm. Tissues are moving into consumption freely. The coarse paper market is sharing the general betterment. Paper board is in good request and prices have a rising tendency.

Mechanical Pulp

The ground wood pulp market is practically unchanged. Manufacturing operations in North America and abroad are keyed to consumption, as far as possible, and the statistical position of the industry is sound. The contract movement is well up to average for the time of year. Prices continue steady.

Chemical Pulp

Business in the chemical pulp market is brisk. Demand for both domestic and imported grades is persistent. Prices are generally strong. Bleached sulphite is now quoted at from $2.90 to $3.85, on dock, Atlantic, Gulf, and West Coast ports. Other grades are also displaying strength.

Old Rope and Bagging

The old rope market is firmer, due to scarcity of offerings. Both domestic and imported old manila rope are exhibiting a stronger undertone than of late. The bagging market is moderately active. Demand for scrap and gunny bagging is fairly persistent. Roofing bagging is in seasonal request.

Rags

Steadiness prevails in the domestic rag market. Demand for new and old cotton rags is fairly active. No. 1 white shirt cuttings are in excellent request both for home and foreign account. Roofing grades are holding up well. No radical changes have been reported in the foreign rag market.

Waste Paper

Board mill interest in the lower grades of paper stock is growing. Prices are somewhat firmer. Strictly folded news is now offered at from .65 to .70 and No. 1 mixed paper at from .55 to .60. Strictly overissue is selling at from .75 to .80; all f.o.b. New York. Book stock is slightly easier.

Twine

The local twine market continues steady. Demand for the various varieties is satisfactory for the season. With increased consumption of wrapping paper reported the outlook in this industry for the future is bright. Prices are holding to previously quoted levels, without difficulty.

Gold Bullion Contract Decision

More than forty years ago the Holyoke Water Power Company made a rental contract with the American Writing Paper Company. It specified that the latter was to pay an annual rent of "a quantity of gold which shall be equal in amount to $1,500 of the gold coin of the United States to the standard of weight and fineness of the coinage" of 1894 "or the equivalent of this commodity in United States currency." The paper company accepted this arrangement. But since the Congressional act of 1933 abrogating payments in gold the paper company has been paying its rent in devalued dollars.

The Supreme Court, in a five-to-four decision, has now found in favor of the paper company. It holds that, to the extent that the contract provides for payment in gold bullion, it is now invalid.

The majority decision, delivered by Justice Cardozo remarks: "The disappointment of expectations and even the frustration of contracts may be lawful exercise of power when expectation and contract are in conflict with the public welfare."

U. K. Newsprint Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 3, 1937—Production of newsprint in the United Kingdom last year is estimated to have reached 896,069 tons according to a report from Assistant Commercial Attache James Somerville, at London.

Imports during the same period reached a total of 1,230,285 tons available for domestic consumption. Canada and Newfoundland together supplied nearly 75 per cent of the imports, the remainder coming chiefly from Finland. Nearly 80 per cent of the exports went to Australia and the remaining 20 per cent to other overseas dominions.

Correction

Referring to the item headed "W. T. Schmitt New President of Bryant" which appeared on page 44 of the February 1 issue of the PAPER TRADE JOURNAL, Joseph E. Brown should have been listed as first vice-president and E. H. Larkin as vice-president in charge of Chicago sales district.

Headquarters for Safety Congress

The Hotel Kansas Citian will be headquarters for the Paper and Pulp Section at the National Safety Council Congress in Kansas City, October 11 to 15, inclusive.

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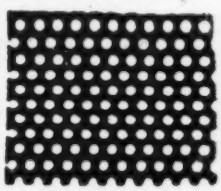

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, March 3, 1937.

BLANC FIXE—Conditions in the blanc fixe market are practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—The bleaching powder market is moderately active. Shipments against contract are proceeding regularly. Prices are maintained at formerly quoted levels. Bleaching powder is quoted at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The casein market continues firm. Domestic standard ground is quoted at 18¾ and finely ground at 19¼ cents; while Argentine standard ground is also selling at 19 and finely ground at 19½ cents per pound; all in bags, car lot quantities.

CAUSTIC SODA—Most of the business transacted in the caustic soda market during the past week was along routine lines. Solid caustic soda is quoted at from $2.55 to $2.60; while the flake and ground are selling at from $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY—The china clay market is displaying strength. Contract shipments are moving freely. Prices remain unchanged. Imported china clay is quoted at from $15 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

CHLORINE—Paper mill demand for chlorine is well sustained. The contract movement is approximately up to average. Prices are holding to schedule, without difficulty. Chlorine is still quoted at from $2.15 to $2.25 per 100 pounds, in tank cars, at works.

ROSIN—The rosin market is little changed. Paper making gum rosin is quoted at $9.50 and wood rosin at $9.85 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $4.10 per 100 pounds, in tank cars, at works.

SALT CAKE—Supplies of salt cake are moving into consumption in good volume. Prices are steady. Salt cake is quoted at from $12 to $13; chrome salt cake at from $11 to $12 per ton, at works; while imported salt cake is selling at from $12 to $13 per ton, ship side.

SODA ASH—The soda ash market is showing signs of improvement. The contract movement is normal for the season. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH—No radical changes transpired in the starch market. Contract shipments are moving in good volume. Prices are holding to schedule. Special paper making starch is quoted at $4 per 100 pounds, in bags; and at $4.27 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA—The sulphate of alumina market is fairly active. Demand from the mills is normal for the season. Commercial grades are quoted at from $1.35 to $1.60; while iron free is selling at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR—The sulphur market is steady. Yearly contracts are quoted at $18 per long ton, on orders of 1,000 tons, or over and $20 on smaller quantities. On spot and nearby car loads the quotation is $21 per ton. All quotations are in car lots, at works.

TALC—Business in the talc market is fairly satisfactory. The contract movement is normal for the time of year. Prices are steady. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds		Ledgers
100% Rag Ext. No. 1	.36		.37
100% Rag	.29	@	.30
75% Rag	.22	@	.23
65% Rag	.19	@	.20
50% Rag	.15½	@	.16½
25% Rag	.13	@	.14

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds		Ledgers
No. 1 Sulphite	7.65	@	8.65
No. 2 Sulphite	6.75	@	7.75
No. 3 Sulphite	6.25	@	7.25
No. 4 Sulphite	5.50		6.50

Book, B Grade, Cased (f.o.b. mill less carload freight allowed)

S. & S. C.	6.00	@	—
S. & S. C. Litho.	6.25	@	—
M. F.	5.75	@	—
No. 4 Coated and Enamel	7.00	@	—
No. 4 Coated Litho	7.00	@	—

Tissues—Per Ream—

White No. 1	.82½	@	—
White No. 1 M. G.	.77½	@	—
White No. 1½	.62½	@	—
White No. 2	.60	@	—
Anti-Tarnish M. G.	.67½	@	—
Colored	.80	@	—
Kraft	.67½	@	—
Manila	.60	@	—
Unbleached Toilet	2.60	@	3.30
Bleached Toilet	3.94	@	5.26

Paper Towels—

Unbleached	2.10	@	3.35
Bleached	3.30	@	3.70

Manila—

No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00

Fibre Papers—

No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75

(Delivered New York)

News, per ton—

Roll, contract	42.50	@	—
Sheets	47.50	@	—

Kraft

No. 1 Northern	5.25	@	5.75
Standard	5.00	@	—
Southern	5.00	@	—
Glazed	4.50	@	—
Striped	4.75	@	—

Boards, per ton—

News	42.50	@45.00
Chip	42.50	@45.00
Sgl. Mla. Ll. Chip	52.50	@55.00
Jute Lined Chip	52.50	@55.00
Kraft Liners	67.50	@70.00
White Pat. Coated	65.00	@67.50
Binders Boards	70.00	@75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—

Moist	33.00	@35.00
Dry	35.00	@35.00

(Delivered)

No. 1 Domestic and Canadian 33.00 @36.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—

Prime Bleached Sulphite	2.90	@	3.85
Prime Qualities—			
Easy-Bleaching Sulphite	2.95	@	3.25
Strong Unbleached Sulphite	2.75	@	3.10

(On Dock, Atlantic Ports)

Kraft Bleached	3.50	@	3.75
Kraft Light & Strong	2.35	@	3.00
Kraft No. 1	2.25	@	2.90
Kraft No. 2	2.10	@	2.25

(F.o.b. Pulp Mill)

Kraft Domestic	2.50	@	2.80

(Delivered)

Soda Bleached	2.90	@	—

Add 60 cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	9.00	@	9.25
Silesias No. 1	6.75	@	7.00
New Unbleached	9.25	@	9.50
Blue Overall	7.00	@	7.25
Fancy	3.50	@	3.75
Washables	2.25	@	2.50
Mixed Khaki Cuttings	3.50	@	3.75
O. D. Khaki Cuttings	4.25	@	4.50

Old Rags

White No. 1—			
Repacked	3.50	@	3.75
Miscellaneous	3.00	@	3.25
White			
Repacked	2.50	@	2.75
Miscellaneous	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.90	@	2.00
Roofing Rags—			
No. 1	Nominal		
No. 2	1.90	@	2.00
No. 3 (bagging)	1.45	@	1.55
No. 4	1.45	@	1.55
No. 5A	1.40	@	1.50

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.50
New Mixed Cuttings	2.00	@	2.25
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxfords	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.50	@	4.00
German Blue Linens	2.50	@	2.75
German Blue Cottons	2.00	@	2.25
Checks and Blues	2.00	@	2.25
Linsey Garments	2.25	@	2.35
Dark Cottons	2.35	@	2.45
Old Shopperies	1.75	@	2.00
New Shopperies	1.75	@	2.00
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.25	@	2.35
Domestic	2.15	@	2.25
Wool Tares, light	1.75	@	1.85
Wool Tares, heavy	2.20	@	2.35
Bright Bagging	1.70	@	1.75
Manila Rope—			
Foreign	3.80	@	3.90
Domestic	3.50	@	3.60
Jute Strings	2.75	@	3.00
Sisal Strings	2.60	@	2.75
Mixed Strings	Nominal		

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.20	@	3.30
Ordinary Hard White No. 1	2.50	@	2.60
Hard White No. 2	2.20	@	2.30
Soft White No. 1	2.00	@	2.10
Flat Stock—			
Stitchless	1.25	@	1.30
Over issue Mag	1.25	@	1.30
Solid Flat Book	1.15	@	1.25
Crumpled No. 1	1.00	@	1.10
Ledger Stock	1.30	@	1.35
New B. B. Chips	.50	@	.55
Manila—			
New Env. Cut	2.15	@	2.25
New Cuttings	1.60	@	1.70
Old Kraft Machine—			
Compressed bales	1.60	@	1.70
News—			
No. 1 White News	1.40	@	1.50
Strictly Overissue	.75	@	.80
Strictly Folded	.65	@	.70
No. 1 Mixed Paper	.55	@	.60

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Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.14¼	@	.17¼
Belg. White Hemp	.15¼	@	.19¼
India Compress	.15¼	@	.15¾
Fine Polished—			
Fine India	.21	@	.23
Unpolished—			
Box	.10¾	@	.11¾
Paper Makers	.10½	@	.12¾
Tube Rope	.11½	@	.14
Wall Paper	.12½	@	.13¾
Wrapping	.16	@	.20
Soft Fiber Rope	.13¾	@	.14¾
(Hard Fibre)			
Bond	.13½	@	.22
Anchor	.13	@	.14½
Manila	.21	@	.28

PHILADELPHIA

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Suiphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M.F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.75	@	—
Coated Lithograph	6.75	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	42.50	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1.	.08	@	.08½
New White, No. 2.	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft.	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.07	@	.07½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.02	@	.02½
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03¼	@	.04
New Dark Seconds	2.00	@	2.25
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03¼	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	2.25
Repacked	2.50	@	2.75
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	2.10	@	2.20
Domestic No. 2	1.90	@	2.00
Roofing bagging	1.75	@	1.85

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.75	@	—
Sisal Rope	2.25	@	2.35
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.25	@	2.50
No. 2	1.00	@	1.10
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.40	@	2.50
No. 2 Hard White	2.20	@	2.25
No. 1 Soft White	2.00	@	2.10
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	—	@	1.75
Ledger Stock, white	1.60	@	1.65
Ledger Stock, colored	1.20	@	1.25
No. 1 Books, heavy	1.20	@	1.25
Manila Cuttings	1.80	@	1.90
Print Manila	.60	@	.65
Container Manila	.50	@	.55
Kraft Paper	—	@	1.40
No. 1 Mixed Paper	.50	@	.55
Straw Board Chip	.50	@	—
Binders Board Chip	.50	@	—
Corrugated Board	.65	@	.70
Overissue News	.75	@	.80
Old Newspapers	.60	@	.65

BOSTON

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.65	8.65
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.25	7.25
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08¼
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¼	@	—
No. 2 Kraft	.05	@	—

(Delivered New England points)

Southern Kraft	.05	@	—
News Print Rolls	42.00	@	—
Straw Board, rolls	.009	—	35.00
Filled News Board	45.00	@	47.50
Chip Board	42.50	@	45.00
Single Manila Lined Chip	52.50	@	57.50
Single White, Patent Coated News Board (Bender)	65.00	@	70.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	70.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	1.25	@	—
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.60	@	1.70
Manila Env. Cuttings, extra quality	2.15	@	2.25
No. 1 Old Manila	.80	@	.85
White Blank News	1.25	@	1.30
No. 1 Kraft	1.45	@	1.50
Mixed Papers	.42½	@	.47½
Print Manila	.60	@	.70
Container Manilas	.27½	@	—
Old Newspapers	.52½	@	.57½
Overissue News	.50	@	.65
Box Board Chips	.40	@	.45
Transmission Rope	2.00	@	2.25
Corrugated Boxes	.60	@	.65
Kraft corrugated boxes	1.20	@	1.35
Screening Wrappers	.60	@	.65

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	3.90	@	4.00
Domestic	3.00	@	3.30
Jute Rope	2.50	@	2.75
Soft Jute Strings	2.50	@	2.62½
Jute Carpet Threads	1.75	@	2.00
Gunny No. 1—			
Foreign	2.25	@	2.35
Domestic	2.10	@	2.20
Bleachery Burlap	4.25	@	4.50
Scrap Burlap—			
Foreign	2.15	@	2.25
Domestic	2.10	@	2.20
Scrap Sisal	2.40	@	2.50
Scrap Sisal for Shredding	2.60	@	2.75
Wool Tares, heavy	2.25	@	2.40
New Burlap Cuttings	2.85	@	3.00
Aust. Wool Pouches	2.90	@	3.00
Heavy Baling Bagging	2.40	@	2.75
Paper Mill Bagging	1.75	@	1.80
Bagging No. 2	1.70	@	—

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04	@	.04¼
New White No. 1	.08¾	@	.09
New White No. 2	.06	@	.06½
Silesias No. 1	.07¼	@	.07½
New Black Silesias	.04¼	@	.04½
Soft Unbleached	.09¼	@	.09½
Blue Cheviot	.07½	@	.07¾
Fancy	.03¾	@	.04
Washable	.03	@	.03¼
Cotton— according to grades—			
Blue Overalls	.07¼	@	.07½
New Black, soft	.04¼	@	.04½
Khaki Cuttings	.04¾	@	.04½
O. D. Khaki	.04½	@	.04¾
Corduroy	.03¼	@	.03½
New Canvas	.07¾	@	.08¼
B.V.D. Cuttings	.08¾	@	.09

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62¼
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.70	@	1.80
No. 2	1.60	@	1.70
No. 3	1.30	@	1.35

Foreign Rags

(F. o. b. Boston)

Dark Cottons	2.20	@	2.30
New white shirt cuttings	6.75	@	7.50
Dutch Blues	3.00	@	3.15
New Checks and Blues	2.85	@	3.00
Old Fustians	2.75	@	2.85
Old Linsey Garments	2.65	@	2.85
New Silesias	6.50	@	7.00

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¾
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1 Folded News	.42½	@	.45
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.35½	@	—
No. 1 Tints	.36½	@	—
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	.14½	@	—
No. 4 Tints	.15½	@	—
No. 5 Bond—White	.10¾	@	—
No. 5 Bond—Tints	.11¾	@	—
No. 5 Bond — Golden Rod	.12¾	@	—
No. 5 Ledger—White	.11¾	@	—
No. 5 Ledger—Tints	.12¾	@	—
No. 6 Bond—White	.10	@	—
No. 6 Bond—Tints	.10½	@	—
No. 6 Bond—Golden Rod	.12	@	—
No. 7 Bond—White	.08¼	@	—
No. 7 Bond—Tints	.08¾	@	—
No. 7 Bond—Golden Rod	.10¾	@	—
Book—			
No. 1 M. F.	6.50	@	6.75
No. 2 M. F.	6.25	@	6.50
No. 3 M. F.	5.00	@	5.35
No. 1 S. C.	7.00	@	7.50
No. 2 S. C.	6.50	@	7.00
No. 3 S. C.	5.50	@	6.00
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft, No. 2	5.40	@	—

(F. o. b. Cars Toronto)

News, per ton—	
Rolls (contract)	Nominal
Sheets	Nominal

Pulp

Ground wood	29.00	@	30.00
Unbleached Sulphite	52.00	@	—
Book (Class 1)	64.00	@	—
Writing (Class 2)	65.00	@	—
Select (Class 3)	66.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.00	@	—
Light and Crumpled Book Stock	.90	@	—
Ledgers and Writings	1.10	@	—
Manilas—			
New Manila Cut	1.20	@	1.40
Printed Manilas	.55	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.65	@	—
Strictly Folded	.65	@	—
No. 1 Mixed Paper	.55	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09	@	.09½
Fancy Shirt Cuttings	.03¾	@	.04